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\$ 2634
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December 15, 2004

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Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Art Unit 2634

Re: U.S. Utility Patent Application ✓
Application No. 09/632,856; Filed: August 4, 2000
For: **Wireless Local Area Network (WLAN) Using Universal Frequency
Translation Technology Including Multi-Phase Embodiments and
Circuit Implementations**

Inventors: Sorrells *et al.*
Our Ref: 1744.0630003

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Resubmission of Information Disclosure Statements;
2. Copy of Information Disclosure Statement with cited references (as required by USPTO rules at the time of filing) filed on July 25, 2002;
3. Copy of Supplemental Information Disclosure Statement with cited references (as required by USPTO rules at the time of filing) filed on June 9, 2003;
4. Copy of Second Supplemental Information Disclosure Statement with cited references (as required by USPTO rules at the time of filing) filed on January 23, 2004;
5. Copy of Third Supplemental Information Disclosure Statement with cited references (as required by USPTO rules at the time of filing) filed on August 19, 2004;

Commissioner for Patents
December 15, 2004
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6. Copy of Fourth Supplemental Information Disclosure Statement with cited references (as required by USPTO rules at the time of filing) filed on November 12, 2004;
7. A compact Disc labeled "Sterne1B" in PDF format;
8. A compact Disc labeled "Sterne2B" in PDF format;
9. A compact Disc labeled "Disc 3" in PDF format; and
10. Return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Jeffrey T. Helvey
Attorney for Applicants
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JTH/agj
344041_1.DOC



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Sorrells *et al.*

Application No.: 09/632,856

Filed: August 4, 2000

For: **Wireless Local Area Network
(WLAN) Using Universal
Frequency Translation Technology
Including Multi-Phase
Embodiments and Circuit
Implementations**

Confirmation No.: 2377

Art Unit: 2634

Examiner: Kim, Kevin

Atty. Docket: 1744.0630003

Resubmission of Information Disclosure Statements

Attn: Mail Stop Issue Fee

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

During prosecution of the subject application, Applicants timely filed an Information Disclosure Statement and Supplemental Information Disclosure Statements on July 25, 2002, June 9, 2003, January 23, 2004, August 19, 2004 and November 12, 2004. However, at the time of Allowance, Applicants had not yet received back the Examiner-initialed PTO-1449 forms indicating that the references were considered. Applicants hereby resubmit the Information Disclosure Statement and Supplemental Information Disclosure Statements, as they were filed on July 25, 2002, June 9, 2003, January 23, 2004, August 19, 2004 and November 12, 2004, so that the Examiner can consider the references and return the initialed PTO-1449 forms. Copies of the references which were provided with the aforementioned filings (as required by

applicable PTO rules at the time of filing) are hereby also re-submitted for the convenience of the Examiner.

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449s, and indicate in the official file wrapper of this patent application that the documents listed have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Jeffrey T. Helvey
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Date: 12/18/04

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Sorrells *et al.*

Appl. No. 09/632,856

Filed: August 4, 2000

For: **Wireless Local Area Network (WLAN)
Using Universal Frequency Translation
Technology Including Multi-Phase
Embodiments and Circuit
Implementations**

Art Unit: 2634

Examiner: Ghayour, M.

Atty. Docket: 1744.0630003

Information Disclosure Statement

Commissioner for Patents
Washington, D.C. 20231

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98.

In addition to providing hard copies of the documents as required by applicable rules (see box 6 below), Applicants herewith provide two Compact Discs labeled "Sterne1B" and "Sterne2B" having stored thereon searchable electronic copies (in PDF format) of the documents listed on the PTO-1449. More specifically, the "Sterne1B" CD contains electronic copies of documents AA1-AR1, AA2-AR2, AA3-AR3, AA4-AR4, AA5-AR5, AA6-AR6, AA7-AR7, AA8-AR8, AA9-AR9, AA10-AR10, AA11-AR11, AA12-AR12, AA13-AR13, AN13-AR13, AA14-AI14, AN14-AR14, AA15-AI15, AN15-AR15, AA16-AI16, AN16-AR16, AA17-AI17, AN17-AR17, AA18-AI18, AN18-AR18, AA19-AI19, AN19-AR19, AA20-AI20, AN20-AR20, AA21-AI21, AN21-AR21, AA22-AI22, AN22-AR22, AA23-AI23, AN23-AR23, AA24-AI24, AN24-AR24, AA25-AI25, AN25-AR25,

AA26-AI26, AN26-AR26, AA27-AI27, AN27-AR27, AA28-AI28, AN28-AR28, AA29-AI29, AN29-AR29, AA30-AI30, AN30-AR30, AA31-AI31, AN31-AR31, AA32-AI32, AN32-AR32, AA33-AI33, AN33-AR33, AA34-AI34, AN34-AR34, AA35-AI35, AN35-AR35, AA36-AI36, AN36-AR36, AA37-AI37, AN37-AR37, AA38-AI38, AN38-AR38, AA39-AI39 and AN39-AR39, and the "Sterne2B" CD contains electronic copies of documents AA40-AI40, AA41-AI41, AA42-AI42, AA43-AI43, AA44-AI44, AA45-AI45, AA46-AB46, AM10, AJ11-AM11, AJ12-AM12, AJ13-AL13, AP50-AR50 and AN51-AP51. Documents AC46-AI46, AA47-AI47, AA48-AI48, AA49-AD49, AM13, AJ14-AM14, AJ15-AM15, AJ16-AM16, AJ17-AM17, AJ18-AM18, AJ19, AK19, AQ51, AR51, AN52-AR52, AN53-AR53, AN54-AR54, AN55-AR55 and AN56 have not yet been scanned. The file names on the CDs correspond to the identifiers on the PTO-1449. It is noted that the CDs are being provided in addition to hard copies of the documents for the convenience of the Examiner.

Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

Applicants provide the following comments regarding the documents:

Documents AD1, AL1, AO1, AC2, AF2, AG2, AI2, AC5, AG5, AB6, AF7, AI7, AB8, AF8, AG9, AK9, AO9, AO11, AA12, AE14, AN14, AB15, AE15, AH15, AO15, AF16, AD18, AG18, AB20, AC20, AQ20, AA22, AH22, AI23, AC24, AF26, AC30, AH31, AC32, AA33, AR33, AH34, AP35 and AO48 were included with Petitions to Make Special pleadings in co-owned related U.S. Patent Nos. 6,061,551, 6,061,555, 6,049,706 and 6,091,940.

Documents AM4, AH6, AL7, AJ9, AM9, AC17, AA20, AG20, AG21, AA24, AD24, AG24, AI31, AA32, AG34, AD36 and AQ37 were cited in searches performed at Applicants' request by the European Patent Office's Searching Authority in the above-referenced co-owned related patents.

Documents AA6, AD6, AO6, AE7, AE8, AA11, AE11, AH11, AI12, AB13, AD13, AH13, AC14, AG14, AE16, AB17, AF19, AD20, AN21, AG23, AH27, AI27, AI28, AH29, AG30, AD37, AR40, AO49 and AQ49 were suggested or identified by potential licensees.

Documents AH5, AH17, AD21, AB34, AE34, AB36, AI36 and AI38 were cited by the Examiner in the above-referenced co-owned related patents.

Documents AR21, AN22-AR22, AN23-23, AN24-AR24, AN25-AR25, AN26-AR26, AN27-AR27, AN28-AR28, AN29-AR29, AN30-AR30, AN31-AR31, AN32-AR32 and AN33-AP33 are press releases issued by assignee ParkerVision, Inc.

Documents AP6-AR6 and AN7-AP7 are copies of Declarations (including Exhibits) made by Messrs. Bultman, Cook, Holtz, Looke, Moses, Parker, and Sorrells, filed in the above-referenced co-owned related patents.

Documents AJ1, AL9, AJ10, AA19, AC25, AB30 and AF32 were cited in search reports in the corresponding foreign applications of the above-referenced co-owned related patents.

Documents AK9, AC17, AD36 and AD40 were listed in a search report issued by the International Searching Authority in PCT application serial number PCT/US00/21359, filed August 4, 2000, entitled "Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AM10, AJ11, AK11 and AE40 were listed in a communication issued by the International Preliminary Examination Authority in PCT application serial number PCT/US00/01108, filed January 19, 2000, entitled "Frequency Translation and Embodiments Thereof Such as the Family Radio Service," directed to related subject matter.

Documents AI7, AJ9, AK9, AG20, AG21, AB30 and AI43 were listed in a written opinion issued by the International Preliminary Examination Authority in PCT application serial number PCT/US00/23923, filed October 18, 1999, entitled "Applications of Frequency Translation," directed to related subject matter.

Documents AA44, AL11, AM11 and AQ50 were listed in a communication issued by the International Searching Authority in PCT application serial number PCT/US00/09911, filed April 14, 2000, entitled "Method And System For Down-converting an Electromagnetic Signal, And Transforms For Same," directed to related subject matter.

Documents AB44 and AC44 were cited by an Examiner in co-pending U.S. Patent Application Serial No. 09/293,342, filed April 16, 1999, entitled "Method and System for Down-Converting Electromagnetic Signals Including Resonant Structures for Enhanced Energy Transfer," directed to related subject matter.

Documents AD44-AI44 and AA45-AD45 were cited by an Examiner in co-pending U.S. Patent Application Serial No. 09/261,129, filed March 3, 1999, entitled "Applications of Universal Frequency Translation," directed to related subject matter.

Documents AE45, AF45, AJ12 and AK12 were listed in a search report issued by the International Searching Authority in PCT application serial number PCT/US00/27555, filed October 6, 2000, entitled "DC Offset, Re-radiation, and I/Q Solutions Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AG45, AH45, AL12 and AM12 were listed in a search report issued by the International Searching Authority in PCT application serial number PCT/US00/34771, filed January 21, 2000, entitled "Phase Comparator Using Undersampling," directed to related subject matter.

Documents AI45, AJ13-AL13 and AB46 were listed in a search report issued by the International Searching Authority in PCT application serial number PCT/US00/27281, filed October 4, 2000, entitled "Frequency Converter and Method," directed to related subject matter.

Document AA46 was cited by an Examiner in co-pending U.S. Patent Application Serial No. 09/293,580, filed April 16, 1999, entitled "Method and System for Frequency Up-Conversion with a Variety of Transmitted Configurations," directed to related subject matter.

Document AC46 was cited by an Examiner in co-pending U.S. Patent Application Serial No. 09/670,831, filed September 28, 2000, entitled "Universal Frequency Translation, Embodiments Thereof, and a Web Site and Web Pages Directed to Same," directed to related subject matter.

Document AD46 was cited by an Examiner in co-pending U.S. Patent Application Serial No. 09/293,095, filed April 16, 1999, entitled "Method and System for Down-Converting an Electromagnetic Signal Having Optimized Switch Structures," directed to related subject matter.

Documents AD35, AE46-AI46 and AA47 were cited by an Examiner in co-pending U.S. Patent Application Serial No. 09/293,342, filed April 16, 1999, entitled "Method and System for Down-Converting Electromagnetic Signals Including Resonant Structures for Enhanced Energy Transfer," directed to related subject matter.

Documents AJ1, AK9-AM9, AG28, AB30, AA32, AN52 and AP55 were cited in an Examination Report in co-pending European Patent Application Serial No. 99954905.8, filed October 18, 1999, entitled "Integrated Frequency Translation and Selectivity with a Variety of Filter Embodiments," directed to related subject matter.

Documents AM13, AJ14, AK14 and AQ51 were cited in an Examination Report in co-pending Japanese Patent Application No. 2000-577,765, filed June 21, 2000, entitled "Method and System for Ensuring Reception of a Communications Signal," directed to related subject matter.

Documents AL14, AM14, AJ15 and AK15 were cited in an Examination Report in co-pending Japanese Patent Application No. 2000-577,761, filed June 20, 2000, entitled "Method and System for Frequency Up-conversion," directed to related subject matter.

Documents AL15, AM15, AJ16-AM16 and AJ17-AM17 were cited in an Examination Report in co-pending Japanese Patent Application No. 2000-577,764, filed June 21, 2000, entitled "Applications of Frequency Translation," directed to related subject matter.

Documents AJ18-AL18, AB47, AC47 and AE47-AG47 were cited by an Examiner in co-pending U.S. Patent Application Serial No. 09/489,675, filed January 24, 2000, entitled "Bar Code Scanner Using Universal Frequency Translation Technology for Up-Conversion and Down-Conversion," directed to related subject matter.

Documents AC24 and AD47 were cited by an Examiner in co-pending U.S. Patent Application Serial No. 09/376,509, filed August 18, 1999, entitled "Method and System for Ensuring Reception of a Communications Signal," directed to related subject matter.

Documents AH47, AI47 and AA48-AE48 are co-owned patents which are directed to related subject matter.

Documents AI43, AH47 and AH48 were cited by an Examiner in co-pending U.S. Patent Application Serial No. 09/293,283, filed April 16, 1999, entitled "Integrated Frequency Translation and Selectivity with a Variety of Filter Embodiments," directed to related subject matter.

Documents AA38 and AG48 were cited by an Examiner in co-pending U.S. Patent Application Serial No. 09/476,091, filed January 3, 2000, entitled "Image-Reject Down-Converter and Embodiments Thereof, Such as the Family Radio Service," directed to related subject matter.

Documents AK19 and AF48 were listed in a search report issued by the International Searching Authority in PCT application serial number PCT/US01/15111, filed October 5, 2001, entitled "Method and Apparatuses Relating to a Universal Platform Module and Enabled by Universal Frequency Translation Technology," directed to related subject matter.

Documents AI48 and AA49 were cited by an Examiner in co-pending U.S. Patent Application Serial No. 09/567,963, filed May 10, 2000, entitled "Frequency Synthesizer Using Universal Frequency Translation Technology," directed to related subject matter.

Document AB49 is a copy of co-pending U.S. Patent Application Serial No. 09/525,615, filed March 14, 2000, entitled "Method, System, and Apparatus for Balanced Frequency Up-Conversion of a Baseband Signal," directed to related subject matter. In the copy provided, the claims are shown as amended on June 6, 2001.

Document AC49 is a copy of co-pending U.S. Patent Application Serial No. 09/632,855, filed August 14, 2000, entitled "Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments," directed to related subject matter. In the copy provided, the claims are shown as amended on June 12, 2001.

Document AD49 is a copy of co-pending U.S. Patent Application Serial No. 09/632,857, filed August 14, 2000, entitled "Wireless Local Area Network (WLAN) Technology and Applications Including Techniques of Universal Frequency Translation," directed to related subject matter. In the copy provided, the claims are shown as amended on June 6, 2001.

It is noted that some of these documents could be classified in more than one of the above categories.

The other documents in the PTO-1449 do not fall within the above categories.

This statement should not be construed as a representation that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- ☒ 1. This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits. No statement or fee is required.
- ☐ 2. This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection or Notice of Allowance.
 - ☐ a. I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
 - ☐ b. I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
 - ☐ c. Attached is our check no. _____ in the amount of _____ in payment of the fee under 37 C.F.R. § 1.17(p).
- ☐ 3. This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. A separate Petition to the Group Director, requesting consideration of this Information Disclosure Statement, is concurrently submitted herewith, along with our Check No. _____ in the amount of \$ _____ in payment of the fee under 37 C.F.R. § 1.17(i).
 - ☐ a. I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three

months prior to the filing of this Information Disclosure Statement.
37 C.F.R. § 1.97(e)(1).

- ☐ b. I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ 4. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- ☒ 5. Concise explanations of the relevance of the non-English language documents AJ1, AK1, AJ6, AK7, AJ8-AL8, AK11-AM11, AJ12, AM13, AJ14-AM14, AJ15-AM15, AJ16-AM16, AJ17-AM17, AJ18-AL18, AQ50 and AQ51 appear below:

Document AJ1 (DE 42 37 692 C1) appears to be a receiver for a digital radio signal. The corresponding U.S. Patent No. 5,493,721 is enclosed as document AG28 on the attached PTO-1449.

Document AK1 (EP 0 035 166 A1) appears to describe a digitized receiver. A copy of the English language abstract of document AK1 is enclosed as document AQ8 on the attached PTO-1449.

Document AJ6 (EP 0 785 635 A1) appears to describe a method and apparatus for frequency diversity transmission using a plurality of uncorrelated carriers. A copy of the English language abstract of document AJ6 is enclosed as document AP8 on the attached PTO-1449.

Document AK7 (FR 2 743 231 A1) is the corresponding French application of document AJ6 (EP 0 785 635 A1), which is described above.

Document AJ8 (JP 2-39632) appears to describe a transmitter for frequency diversity. A copy of the English language abstract of document AJ8 is enclosed as document AO8 on the attached PTO-1449.

Document AK8 (JP 2-131629) appears to describe a transmitter-receiver for frequency diversity. A copy of the English language abstract of document AK8 is enclosed as document AN8 on the attached PTO-1449.

Document AL8 (JP 2-276351) appears to describe an FSK demodulating circuit. A copy of the English language abstract of document AL8 is enclosed as document AR7 on the attached PTO-1449.

Document AK11 (FR 2245130) appears to describe a converter. A partial English language translation of document AK11 is enclosed as document AP50 on the attached PTO-1449.

Document AL11 (DE 3541031) appears to describe a method and device for demodulating high-frequency modulated signals. An English translation of document AL11 is enclosed as document AR50 on the attached PTO-1449.

Document AM11 (EP 0 732 803) appears to describe a procedure and device for demodulation by sampling. An English translation of document AM11 is enclosed as document AN51 on the attached PTO-1449.

Document AJ12 (DE 19735798) appears to describe a transceiver. An English translation of document AJ12 is enclosed as document AP51 on the attached PTO-1449.

Document AM13 (JP 56-114451) appears to describe a system for diversity radio transmission. The corresponding U.S. Patent No. 4,363,132 is enclosed as document AF8 on the attached PTO-1449.

Document AJ14 (JP 8-32556) appears to describe a data transmitter-receiver. A copy of the English language abstract of document AJ14 is enclosed as document AO52 on the attached PTO-1449.

Document AK14 (JP 8-139524) appears to describe a frequency converting circuit and radio communication device. A copy of the English language abstract of document AK14 is enclosed as document AP52 on the attached PTO-1449.

Document AL14 (JP 59-144249) appears to describe a pulse signal transmission system. A copy of the English language abstract of document AL14 is enclosed as document AQ52 on the attached PTO-1449.

Document AM14 (JP 63-54002) appears to describe a microwave burst signal generator which incorporates a FET frequency multiplier. A copy of the English language abstract of document AM14 is enclosed as document AR52 on the attached PTO-1449.

Document AJ15 (JP 6-237276) appears to describe a quadrature modulator. A copy of the English language abstract of document AJ15 is enclosed as document AN53 on the attached PTO-1449.

Document AK15 (JP 8-23359) appears to describe a digital quadrature modulation device. A copy of the English language abstract of document AK15 is enclosed as document AO53 on the attached PTO-1449.

Document AL15 (JP 47-2314) appears to describe a demodulator. An English language translation of document AL15 is enclosed as document AP53 on the attached PTO-1449.

Document AM15 (JP 58-7903) appears to describe a switched capacitor modulator. A partial English language translation of document AM15 is enclosed as document AQ53 on the attached PTO-1449.

Document AJ16 (JP 58-133004) appears to describe an amplitude detector. A copy of the English language abstract of document AJ16 is enclosed as document AR53 on the attached PTO-1449.

Document AK16 (JP 60-58705) appears to describe a frequency converting circuit. A copy of the English language abstract of document AK16 is enclosed as document AN54 on the attached PTO-1449.

Document AL16 (JP 4-123614) appears to describe a level converting circuit. A copy of the English language abstract of document AL16 is enclosed as document AO54 on the attached PTO-1449.

Document AM16 (JP 4-127601) appears to describe a frequency conversion circuit. A copy of the English language abstract of document AM16 is enclosed as document AP54 on the attached PTO-1449.

Document AJ17 (JP 5-175730) appears to describe a time division direct receiver.

A copy of the English language abstract of document AJ17 is enclosed as document AQ54 on the attached PTO-1449.

Document AK17 (JP 5-175734) appears to describe an FM demodulator. A copy of the English language abstract of document AK17 is enclosed as document AR54 on the attached PTO-1449.

Document AL17 (JP 7-154344) appears to describe a receiver for receiving modulated carrier signals and an IQ mixer/demodulator using it's receiving constitution. A copy of the English language abstract of document AL17 is enclosed as document AN55 on the attached PTO-1449.

Document AM17 (JP 7-307620) appears to describe a bottom detection circuit. A copy of the English language abstract of document AM17 is enclosed as document AO55 on the attached PTO-1449.

Document AJ18 (JP 55-66057) appears to describe a bar-code detection circuit. A copy of the English language abstract of document AJ18 is enclosed as document AQ55 on the attached PTO-1449.

Document AK18 (JP 63-65587) appears to describe a wireless light pen device. A copy of the English language abstract of document AK18 is enclosed as document AR55 on the attached PTO-1449.

Document AL18 (JP 63-153691) appears to describe a data transfer for a semiconductor data carrier system. A copy of the English language abstract of document AL18 is enclosed as document AN56 on the attached PTO-1449.

Document AQ50 (Fest *et al.*) appears to discuss analog-digital converters. An English translation of document AQ50 is enclosed as document AO51 on the attached PTO-1449.

Document AQ51 (Miki *et al.*) appears to describe modulation systems. A partial English-language translation of document AQ51 is enclosed as document AR51 on the attached PTO-1449.

- ☒ 6. Copies of documents AM18, AJ19, AK19, AF48-AI48, AA49-AD49 and AP53 are enclosed. Copies of the remaining documents were submitted to the Patent Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application

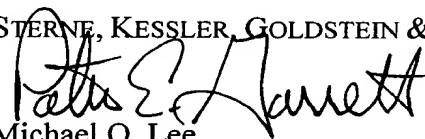
No. 09/525,615, filed March 14, 2000, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

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Date: 7-25-02

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July 25, 2002

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FILE COPY

Commissioner for Patents
Washington, D.C. 20231

Art Unit: 2634

Re: U.S. Utility Patent Application
Appl. No. 09/632,856; Filed: August 4, 2000
For: **Wireless Local Area Network (WLAN) Using Universal Frequency
Translation Technology Including Multi-Phase Embodiments and
Circuit Implementations**
Inventors: Sorrells *et al.*
Our Ref: 1744.0630003/MQL/JTH

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Information Disclosure Statement;
2. A list of the cited documents on Forms PTO-1449 (56 pages);
3. A copy of the twelve (12) documents cited on Forms PTO-1449;
4. A compact Disc labeled "Sterne1B" in PDF format;
5. A compact Disc labeled "Sterne2B" in PDF format; and
6. Return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are

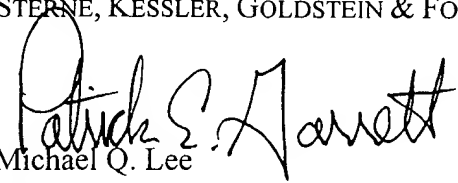
Commissioner for Patents
July 25, 2002
Page 2

necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

for  39,987
Michael Q. Lee
Attorney for Applicants
Registration No. 35,239

JTH/slw
Enclosures

SKGF_DC1:38454.1

Applicants: Sorrells *et al.*

Due Date: N/A

Art Unit: 2634

Examiner: To be Assigned

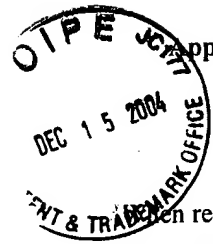
Docket: 1744.0630003

Atty: MQL/JTH

Application No.: 09/632,856

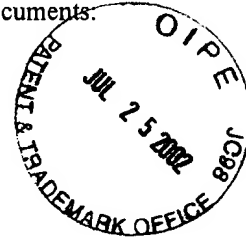
Filed: August 4, 2000

For: **Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit Implementations**



When receipt stamp is placed hereon, the USPTO acknowledges receipt of the following documents:

1. SKGF Cover Letter;
2. Information Disclosure Statement;
3. A list of the cited documents on Forms PTO-1449 (56 pages);
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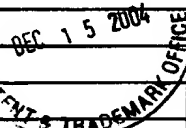
Art Unit: 2634

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FORM PTO-1449

INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.
1744.0630003APPLICATION NO.
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2634**U.S. PATENT DOCUMENTS**

SIGNATURE DOCUMENTS							
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA1	2,057,613	10/1936	Gardner	250	8	
	AB1	2,241,078	05/1941	Vreeland	179	15	
	AC1	2,270,385	01/1942	Skillman	179	15	
	AD1	2,283,575	05/1942	Roberts	250	6	
	AE1	2,358,152	09/1944	Earp	179	171.5	
	AF1	2,410,350	10/1946	Labin <i>et al.</i>	179	15	
	AG1	2,451,430	10/1948	Barone	250	8	
	AH1	2,462,069	02/1949	Chatterjea <i>et al.</i>	250	17	
	AI1	2,462,181	02/1949	Grosselfinger	250	17	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ1	DE 42 37 692 C1	03/1994	DE	H04B	1/26	No
	AK1	EP 0 035 166 A1	09/1981	EP	H04B	1/26	No
	AL1	EP 0 193 899 B1	06/1990	EP	G01S	7/52	N/A
	AM1	EP 0 380 351 A2	08/1990	EP	H03H	17/04	N/A

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	1	Aghvami, H. et al., "Land Mobile Satellites Using the Highly Elliptic Orbits- The UK T-SAT Mobile Payload," <i>Fourth International Conference on Satellite Systems for Mobile Communications and Navigation</i> , IEE, pp. 147-153 (October 17-19, 1988).
	AO	1	Akers, N.P. et al., "RF Sampling Gates: a Brief Review," <i>IEE Proceedings</i> , IEE, Vol. 133, Part A, No. 1, pp. 45-49 (January 1986).
	AP	1	Al-Ahmad, H.A.M. et al., "Doppler Frequency Correction for a Non-Geostationary Communications Satellite. Techniques for CERS and T-SAT," <i>Electronics Division Colloquium on Low Noise Oscillators and Synthesizers</i> , IEE, pp. 4/1-4/5 (January 23, 1986).
	AQ	1	Ali, I. et al., "Doppler Characterization for LEO Satellites," <i>IEEE Transactions on Communications</i> , IEEE, Vol. 46, No. 3, pp. 309-313 (March 1998).
	AR	1	Allan, D.W., "Statistics of Atomic Frequency Standards," <i>Proceedings Of The IEEE Special Issue on Frequency Stability</i> , IEEE, pp. 221-230 (February 1966).

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	AA2	2,472,798	06/1949	Fredendall	178	44	
	AB2	2,497,859	02/1950	Boughtwood <i>et al.</i>	250	8	
	AC2	2,499,279	02/1950	Peterson	332	41	
	AD2	2,802,208	08/1957	Hobbs	343	176	
	AE2	2,985,875	05/1961	Grisdale <i>et al.</i>	343	100	
	AF2	3,023,309	02/1962	Foulkes	250	17	
	AG2	3,069,679	12/1962	Sweeney <i>et al.</i>	343	200	
	AH2	3,104,393	09/1963	Vogelman	343	200	
	AI2	3,114,106	12/1963	McManus	325	56	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ2	EP 0 380 351 A3	02/1991	EP	H03H	17/04	N/A
	AK2	EP 0 411 840 A2	02/1991	EP	G01R	33/36	N/A
	AL2	EP 0 411 840 A3	07/1991	EP	G01R	33/36	N/A
	AM2	EP 0 411 840 B1	10/1995	EP	G01R	33/36	N/A

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	AN	2	Allstot, D.J. <i>et al.</i> , "MOS Switched Capacitor Ladder Filters," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. SC-13, No. 6, pp. 806-814 (December 1978).
	AO	2	Allstot, D.J. and Black Jr. W.C., "Technological Design Considerations for Monolithic MOS Switched-Capacitor Filtering Systems," <i>Proceedings of the IEEE</i> , IEEE, Vol. 71, No. 8, pp. 967-986 (August 1983).
	AP	2	Alouini, M. <i>et al.</i> , "Channel Characterization and Modeling for Ka-Band Very Small Aperture Terminals," <i>Proceedings Of the IEEE</i> , IEEE, Vol. 85, No. 6, pp. 981-997 (June 1997).
	AQ	2	Andreyev, G.A. and Ogarev, S.A., "Phase Distortions of Keyed Millimeter-Wave Signals in the Case of Propagation in a Turbulent Atmosphere," <i>Telecommunications and Radio Engineering</i> , Scripta Technica, Vol. 43, No. 12, pp. 87-90 (December 1988).
	AR	2	Antonetti, A. <i>et al.</i> , "Optoelectronic Sampling in the Picosecond Range," <i>Optics Communications</i> , North-Holland Publishing Company, Vol. 21, No. 2, pp. 211-214 (May 1977).

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	AA3	3,118,117	01/1964	King <i>et al.</i>	332	22	
	AB3	3,226,643	12/1965	McNair	325	40	
	AC3	3,258,694	06/1966	Shepherd	325	145	
	AD3	3,383,598	05/1968	Sanders	325	163	
	AE3	3,384,822	05/1968	Miyagi	325	30	
	AF3	3,454,718	07/1969	Perreault	178	66	
	AG3	3,523,291	08/1970	Pierret	340	347	
	AH3	3,548,342	12/1970	Maxey	332	9	
	AI3	3,555,428	01/1971	Perreault	325	320	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ3	EP 0 423 718 A2	04/1991	EP	H04N	7/01	N/A
	AK3	EP 0 423 718 A3	08/1992	EP	H04N	7/01	N/A
	AL3	EP 0 486 095 A1	05/1992	EP	H03D	3/00	N/A
	AM3	EP 0 486 095 B1	02/1997	EP	H03D	3/00	N/A

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>3</u>	Austin, J. <i>et al.</i> , "Doppler Correction of the Telecommunication Payload Oscillators in the UK T-SAT," <i>18th European Microwave Conference</i> , Microwave Exhibitions and Publishers Ltd., pp. 851-857 (September 12 - 15, 1988).
	AO	<u>3</u>	Auston, D.H., "Picosecond optoelectronic switching and gating in silicon," <i>Applied Physics Letters</i> , American Institute of Physics, Vol. 26, No. 3, pp. 101-103 (February 1, 1975).
	AP	<u>3</u>	Baher, H., "Transfer Functions for Switched-Capacitor and Wave Digital Filters," <i>IEEE Transactions on Circuits and Systems</i> , IEEE Circuits and Systems Society, Vol. CAS-33, No. 11, pp. 1138-1142 (November 1986).
	AQ	<u>3</u>	Baines, R., "The DSP Bottleneck," <i>IEEE Communications Magazine</i> , IEEE Communications Society, pp. 46-54 (May 1995).
	AR	<u>3</u>	Banjo, O.P. and Vilar, E., "Binary Error Probabilities on Earth-Space Links Subject to Scintillation Fading," <i>Electronics Letters</i> , IEE, Vol. 21, No. 7, pp. 296-297 (March 28, 1985).

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	AA4	3,617,892	11/1971	Hawley <i>et al.</i>	325	145	
	AB4	3,621,402	11/1971	Gardner	328	37	
	AC4	3,623,160	11/1971	Giles <i>et al.</i>	340	347 DA	
	AD4	3,626,417	12/1971	Gilbert	343	203	
	AE4	3,629,696	12/1971	Bartelink	324	57 R	
	AF4	3,662,268	05/1972	Gans <i>et al.</i>	325	56	
	AG4	3,689,841	09/1972	Bello <i>et al.</i>	325	39	
	AH4	3,714,577	01/1973	Hayes	325	145	
	AI4	3,717,844	02/1973	Barret <i>et al.</i>	340	5 R	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ4	EP 0 512 748 A2	11/1992	EP	H04N	9/64	N/A
	AK4	EP 0 512 748 A3	07/1993	EP	H04N	9/64	N/A
	AL4	EP 0 512 748 B1	11/1998	EP	H04N	9/64	N/A
	AM4	EP 0 548 542 A1	06/1993	EP	H03B	19/14	N/A

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>4</u>	Banjo, O.P. and Vilar, E., "The Dependence of Slant Path Amplitude Scintillations on Various Meteorological Parameters," <i>Fifth International Conference on Antennas and Propagation (ICAP 87) Part 2: Propagation</i> , IEE, pp. 277-280 (March 30 - April 2, 1987).
	AO	<u>4</u>	Banjo, O.P. and Vilar, E. "Measurement and Modeling of Amplitude Scintillations on Low-Elevation Earth-Space Paths and Impact on Communication Systems," <i>IEEE Transactions on Communications</i> , IEEE Communications Society, Vol. COM-34, No. 8, pp. 774-780 (August 1986).
	AP	<u>4</u>	Banjo, O.P. <i>et al.</i> , "Tropospheric Amplitude Spectra Due to Absorption and Scattering in Earth-Space Paths," <i>Fourth International Conference on Antennas and Propagation (ICAP 85)</i> , IEE, pp. 77-82 (April 16-19, 1985).
	AQ	<u>4</u>	Basili, P. <i>et al.</i> , "Case Study of Intense Scintillation Events on the OTS Path," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE, Vol. 38, No. 1, pp. 107-113 (January 1990).
	AR	<u>4</u>	Basili, P. <i>et al.</i> , "Observation of High C ² and Turbulent Path Length on OTS Space-Earth Link," <i>Electronics Letters</i> , IEE, Vol. 24, No. 17, pp. 1114-1116 (August 18, 1988).

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2634**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA5	3,735,048	05/1973	Tomsa <i>et al.</i>	179	15 BM	
	AB5	3,806,811	04/1974	Thompson	325	146	
	AC5	3,868,601	02/1975	MacAfee	332	45	
	AD5	3,949,300	04/1976	Sadler	325	31	
	AE5	3,967,202	06/1976	Batz	325	31	
	AF5	3,980,945	09/1976	Bickford	325	30	
	AG5	3,987,280	10/1976	Bauer	235	150.53	
	AH5	3,991,277	11/1976	Hirata	179	15 FD	
	AI5	4,003,002	01/1977	Snijders <i>et al.</i>	332	10	

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ5	EP 0 632 288 A2	01/1995	EP	G01S	13/75	N/A
	AK5	EP 0 632 288 A3	07/1996	EP	G01S	13/75	N/A
	AL5	EP 0 696 854 A1	02/1996	EP	H04B	1/26	N/A
	AM5	EP 0 782 275 A2	07/1997	EP	H04B	7/02	N/A

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>5</u>	Blakey, J.R. <i>et al.</i> , "Measurement of Atmospheric Millimetre-Wave Phase Scintillations in an Absorption Region," <i>Electronics Letters</i> , IEE, Vol. 21, No. 11, pp. 486-487 (May 23, 1985).
	AO	<u>5</u>	Burgueño, A. <i>et al.</i> , "Influence of rain gauge integration time on the rain rate statistics used in microwave communications," <i>Annales des télécommunications</i> , International Union of Radio Science, pp. 522-527 (September/October 1988).
	AP	<u>5</u>	Burgueño, A. <i>et al.</i> , "Long-Term Joint Statistical Analysis of Duration and Intensity of Rainfall Rate with Application to Microwave Communications," <i>Fifth International Conference on Antennas and Propagation (ICAP 87) Part 2: Propagation</i> , IEE, pp. 198-201 (March 30 - April 2, 1987).
	AQ	<u>5</u>	Burgueño, A. <i>et al.</i> , "Long Term Statistics of Precipitation Rate Return Periods in the Context of Microwave Communications," <i>Sixth International Conference on Antennas and Propagation (ICAP 89) Part 2: Propagation</i> , IEE, pp. 297-301 (April 4-7, 1989).
	AR	<u>5</u>	Burgueño, A. <i>et al.</i> , "Spectral Analysis of 49 Years of Rainfall Rate and Relation to Fade Dynamics," <i>IEEE Transactions on Communications</i> , IEEE Communications Society, Vol. 38, No. 9, pp. 1359-1366 (September 1990).

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	AA6	4,013,966	03/1977	Campbell	325	363	
	AB6	4,019,140	04/1977	Swerdlow	322	65	
	AC6	4,035,732	07/1977	Lohrmann	325	446	
	AD6	4,047,121	09/1977	Campbell	331	76	
	AE6	4,066,841	01/1978	Young	178	66 R	
	AF6	4,066,919	01/1978	Huntington	307	353	
	AG6	4,081,748	03/1978	Batz	325	56	
	AH6	4,130,765	12/1978	Arakelian et al.	307	220 R	
	AI6	4,130,806	12/1978	Van Gerwen et al.	325	487	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ6	EP 0 785 635 A1	07/1997	EP	H04B	1/713	No
	AK6	EP 0 795 978 A2	09/1997	EP	H04L	5/06	N/A
	AL6	EP 0 837 565 A1	04/1998	EP	H04B	1/69	N/A
	AM6	EP 0 862 274 A1	09/1998	EP	H03M	1/06	N/A

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>6</u>	Catalan, C. and Vilar, E., "Approach for satellite slant path remote sensing," <i>Electronics Letters</i> , IEE, Vol. 34, No. 12, pp. 1238-1240 (June 11, 1998).
	AO	<u>6</u>	Chan, P. et al., "A Highly Linear 1-GHz CMOS Downconversion Mixer," <i>European Solid State Circuits Conference</i> , IEEE Communication Society, pp. 210-213 (September 22-24, 1993).
	AP	<u>6</u>	Copy of Declaration of Michael J. Bultman filed in patent application Ser. No. 09/176,022, which is directed to related subject matter, 2 pages.
	AQ	<u>6</u>	Copy of Declaration of Robert W. Cook filed in patent application Ser. No. 09/176,022, which is directed to related subject matter, 2 pages.
	AR	<u>6</u>	Copy of Declaration of Alex Holtz filed in patent application Ser. No. 09/176,022, which is directed to related subject matter, 3 pages.

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	AA7	4,142,155	02/1979	Adachi	325	47	
	AB7	4,170,764	10/1979	Salz et al.	332	17	
	AC7	4,204,171	05/1980	Sutphin, Jr.	328	167	
	AD7	4,210,872	07/1980	Gregorian	330	9	
	AE7	4,245,355	01/1981	Pascoe et al.	455	326	
	AF7	4,253,066	02/1981	Fisher et al.	329	50	
	AG7	4,253,069	02/1981	Nossek	330	107	
	AH7	4,308,614	12/1981	Fisher et al.	370	119	
	AI7	4,320,361	03/1982	Kikkert	332	16 R	

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	AJ7	EP 0 874 499 A2	10/1998	EP	H04L	25/06	N/A
	AK7	FR 2 743 231 A1	07/1997	FR	H04B	7/12	No
	AL7	GB 2 161 344 A	01/1986	GB	H04B	7/12	N/A
	AM7	GB 2 215 945 A	09/1989	GB	H04L	27/00	N/A

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	AN	<u>1</u>	Copy of Declaration of Richard C. Looke filed in patent application Ser. No. 09/176,022, which is directed to related subject matter, 2 pages.
	AO	<u>1</u>	Copy of Declaration of Charley D. Moses, Jr. filed in patent application Ser. No. 09/176,022, which is directed to related subject matter, 2 pages.
	AP	<u>1</u>	Copy of Declaration of Jeffrey L. Parker and David F. Sorrells, with attachment Exhibit 1, filed in patent application Ser. No. 09/176,022, which is directed to related subject matter, 130 pages.
	AQ	<u>1</u>	Dewey, R.J. and Collier, C.J., "Multi-Mode Radio Receiver," <i>Electronics Division Colloquium on Digitally Implemented Radios</i> , IEE, pp. 3/1-3/5 (October 18, 1985).
	AR	<u>1</u>	DIALOG File 347 (JAPIO) English Language Patent Abstract for JP 2-276351, 1 page (November 13, 1990 - Date of publication of application).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA8	4,320,536	03/1982	Dietrich	455	325	
	AB8	4,346,477	08/1982	Gordy	455	257	
	AC8	4,355,401	10/1982	Ikoma <i>et al.</i>	375	5	
	AD8	4,356,558	10/1982	Owen <i>et al.</i>	364	724	
	AE8	4,360,867	11/1982	Gonda	363	158	
	AF8	4,363,132	12/1982	Collin	455	52	
	AG8	4,365,217	12/1982	Berger <i>et al.</i>	333	165	
	AH8	4,370,572	01/1983	Cosand <i>et al.</i>	307	353	
	AI8	4,389,579	06/1983	Stein	307	353	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ8	JP 2-39632	02/1990	JP	H04B	7/12	No
	AK8	JP 2-131629	05/1990	JP	H04B	7/12	No
	AL8	JP 2-276351	11/1990	JP	H04L	27/22	No
	AM8	WO 80/01633 A1	08/1980	PCT	H04J	1/08	N/A

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	AN	<u>8</u>	DIALOG File 347 (JAPIO) English Language Patent Abstract for JP 2-131629, 1 page (May 21, 1990 - Date of publication of application).
	AO	<u>8</u>	DIALOG File 347 (JAPIO) English Language Patent Abstract for JP 2-39632, 1 page (February 8, 1990 - Date of publication of application).
	AP	<u>8</u>	DIALOG File 348 (European Patents) English Language Patent Abstract for EP 0 785 635 A1, 3 pages (December 26, 1996 - Date of publication of application).
	AQ	<u>8</u>	DIALOG File 348 (European Patents) English Language Patent Abstract for EP 35166 A1, 2 pages (February 18, 1981 - Date of publication of application).
	AR	<u>8</u>	"DSO takes sampling rate to 1 Ghz," <i>Electronic Engineering</i> , Morgan Grampian Publishers, Vol. 59, No. 723, pp. 77 and 79 (March 1987).

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	AA9	4,392,255	07/1983	Del Giudice	455	328	
	AB9	4,430,629	02/1984	Betzel et al.	333	165	
	AC9	4,446,438	05/1984	Chang et al.	328	127	
	AD9	4,456,990	06/1984	Fisher et al.	370	119	
	AE9	4,472,785	09/1984	Kasuga	364	718	
	AF9	4,479,226	10/1984	Prabhu et al.	375	1	
	AG9	4,481,490	11/1984	Huntley	332	41	
	AH9	4,481,642	11/1984	Hanson	375	9	
	AI9	4,485,488	11/1984	Houdart	455	327	

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	AJ9	WO 94/05087 A1	03/1994	PCT	H03M	1/00	N/A
	AK9	WO 96/02977 A1	02/1996	PCT	H04B	1/26	N/A
	AL9	WO 96/08078 A1	03/1996	PCT	H03D	3/00	N/A
	AM9	WO 96/39750 A1	12/1996	PCT	H04B	1/26	N/A

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	AN	9	Erdi, G. and Henneuse, P.R., "A Precision FET-Less Sample-and-Hold with High Charge-to-Droop Current Ratio," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. SC-13, No. 6, pp. 864-873 (December 1978).
	AO	9	Faulkner, N.D. and Vilar, E., "Subharmonic Sampling for the Measurement of Short Term Stability of Microwave Oscillators," <i>IEEE Transactions on Instrumentation and Measurement</i> , IEEE, Vol. IM-32, No. 1, pp. 208-213 (March 1983).
	AP	9	Faulkner, N.D. et al., "Sub-Harmonic Sampling for the Accurate Measurement of Frequency Stability of Microwave Oscillators," <i>CPEM 82 Digest: Conference on Precision Electromagnetic Measurements</i> , IEEE, pp. M-10 and M-11 (1982).
	AQ	9	Faulkner, N.D. and Vilar, E., "Time Domain Analysis of Frequency Stability Using Non-Zero Dead-Time Counter Techniques," <i>CPEM 84 Digest Conference on Precision Electromagnetic Measurements</i> , IEEE, pp. 81-82 (1984).
	AR	9	Filip, M. and Vilar, E., "Optimum Utilization of the Channel Capacity of a Satellite Link in the Presence of Amplitude Scintillations and Rain Attenuation," <i>IEEE Transactions on Communications</i> , IEEE Communications Society, Vol. 38, No. 11, pp. 1958-1965 (November 1990).

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	AA10	4,504,803	03/1985	Lee et al.	332	31 R	
	AB10	4,517,519	05/1985	Mukaiyama	329	126	
	AC10	4,517,520	05/1985	Ogawa	329	145	
	AD10	4,518,935	05/1985	van Roermund	333	173	
	AE10	4,521,892	06/1985	Vance et al.	375	88	
	AF10	4,563,773	07/1986	Dixon, Jr. et al.	455	327	
	AG10	4,577,157	03/1986	Reed	329	50	
	AH10	4,583,239	04/1986	Vance	375	94	
	AI10	4,591,736	05/1986	Hirao et al.	307	267	

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	AJ10	WO 97/38490 A1	10/1997	PCT	H03K	7/00	N/A
	AK10	WO 98/00953 A1	01/1998	PCT	H04L	27/26	N/A
	AL10	WO 98/24201 A1	06/1998	PCT	H04H	1/00	N/A
	AM10	EP 0 099 265 A1	01/1984	EP	H03D	3/04	N/A

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	AN	<u>10</u>	Fukahori, K., "A CMOS Narrow-Band Signaling Filter with Q Reduction," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. SC-19, No. 6, pp. 926-932 (December 1984).
	AO	<u>10</u>	Fukuchi, H. and Otsu, Y., "Available time statistics of rain attenuation on earth-space path," <i>IEE Proceedings-H: Microwaves, Antennas and Propagation</i> , IEE, Vol. 135, Pt. H, No. 6, pp. 387-390 (December 1988).
	AP	<u>10</u>	Gibbins, C.J. and Chadha, R., "Millimetre-wave propagation through hydrocarbon flame," <i>IEE Proceedings</i> , IEE, Vol. 134, Pt. H, No. 2, pp. 169-173 (April 1987).
	AQ	<u>10</u>	Gilchrist, B. et al., "Sampling hikes performance of frequency synthesizers," <i>Microwaves & RF</i> , Hayden Publishing, Vol. 23, No. 1, pp. 93-94 and 110 (January 1984).
	AR	<u>10</u>	Gossard, E.E., "Clear weather meteorological effects on propagation at frequencies above 1 Ghz," <i>Radio Science</i> , American Geophysical Union, Vol. 16, No. 5, pp. 589-608 (September - October 1981).

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	AA11	4,602,220	07/1986	Kurihara	331	19	
	AB11	4,603,300	07/1986	Welles, II <i>et al.</i>	329	50	
	AC11	4,612,464	09/1986	Ishikawa <i>et al.</i>	307	496	
	AD11	4,612,518	09/1986	Gans <i>et al.</i>	332	21	
	AE11	4,616,191	10/1986	Galani <i>et al.</i>	331	4	
	AF11	4,621,217	11/1986	Saxe <i>et al.</i>	315	1	
	AG11	4,628,517	12/1986	Schwarz <i>et al.</i>	375	40	
	AH11	4,634,998	01/1987	Crawford	331	1 A	
	AI11	4,648,021	03/1987	Alberkrack	363	157	

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	AJ11	EP 0 560 228 A1	09/1993	EP	H03D	7/12	N/A
	AK11	FR 2 245 130	04/1975	FR	H03K	5/13	Yes (See AP50)
	AL11	DE 35 41 031 A1	05/1986	DE	H03D	3/00	Yes (See AR50)
	AM11	EP 0 732 803 A1	09/1996	EP	H03D	3/00	Yes (See AN51)

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	AN	<u>11</u>	Gregorian, R. <i>et al.</i> , "Switched-Capacitor Circuit Design," <i>Proceedings of the IEEE</i> , IEEE, Vol. 71, No. 8, pp. 941-966 (August 1983).
	AO	<u>11</u>	Groshong <i>et al.</i> , "Undersampling Techniques Simplify Digital Radio," <i>Electronic Design</i> , Penton Publishing, pp. 67-68, 70, 73-75 and 78 (May 23, 1991).
	AP	<u>11</u>	Grove, W.M., "Sampling for Oscilloscopes and Other RF Systems: Dc through X-Band," <i>IEEE Transactions on Microwave Theory and Techniques</i> , IEEE, pp. 629-635 (December 1966).
	AQ	<u>11</u>	Haddon, J. <i>et al.</i> , "Measurement of Microwave Scintillations on a Satellite Down-Link at X-Band," <i>Antennas and Propagation</i> , IEE, pp. 113-117 (1981).
	AR	<u>11</u>	Haddon, J. and Vilar, E., "Scattering Induced Microwave Scintillations from Clear Air and Rain on Earth Space Paths and the Influence of Antenna Aperture," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE, Vol. AP-34, No. 5, pp. 646-657 (May 1986).

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	AA12	4,651,034	03/1987	Sato	307	556	
	AB12	4,675,882	06/1987	Lillie et al.	375	80	
	AC12	4,688,253	08/1987	Gumm	381	7	
	AD12	4,716,376	12/1987	Daudelin	329	107	
	AE12	4,716,388	12/1987	Jacobs	333	173	
	AF12	4,718,113	01/1988	Rother et al.	455	209	
	AG12	4,726,041	02/1988	Prohaska et al.	375	91	
	AH12	4,733,403	03/1988	Simone	375	103	
	AI12	4,734,591	03/1988	Ichitsubo	307	219.1	

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	AJ12	DE 197 35 798 C1	07/1998	DE	H04L	27/00	Yes (See AP51)
	AK12	WO 98/40968 A2&A3	09/1998	PCT	H03L	7/08	N/A
	AL12	EP 0 529 836 A1	03/1993	EP	H03L	7/089	N/A
	AM12	EP 0 795 955 A2&A3	09/1997	EP	H03D	13/00	N/A

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	AN	<u>12</u>	Hafdallah, H. et al., "2-4 Ghz MESFET Sampler," <i>Electronics Letters</i> , IEE, Vol. 24, No. 3, pp. 151-153 (February 4, 1988).
	AO	<u>12</u>	Herben, M.H.A.J., "Amplitude and Phase Scintillation Measurements on 8-2 km Line-Of-Sight Path at 30 Ghz," <i>Electronics Letters</i> , IEE, Vol. 18, No. 7, pp. 287-289 (April 1, 1982).
	AP	<u>12</u>	Hewitt, A. et al., "An 18 Ghz Wideband LOS Multipath Experiment," <i>International Conference on Measurements for Telecommunication Transmission Systems - MTTS 85</i> , IEE, pp. 112-116 (November 27-28, 1985)
	AQ	<u>12</u>	Hewitt, A. et al., "An Autoregressive Approach to the Identification of Multipath Ray Parameters from Field Measurements," <i>IEEE Transactions on Communications</i> , IEEE Communications Society, Vol. 37, No. 11, pp. 1136-1143 (November 1989).
	AR	<u>12</u>	Hewitt, A. and Vilar, E., "Selective fading on LOS Microwave Links: Classical and Spread-Spectrum Measurement Techniques," <i>IEEE Transactions on Communications</i> , IEEE Communications Society, Vol. 36, No. 7, pp. 789-796 (July 1988).

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	AA13	4,737,969	04/1988	Steel et al.	375	67	
	AB13	4,743,858	05/1988	Everard	330	10	
	AC13	4,745,463	05/1988	Lu	358	23	
	AD13	4,751,468	06/1988	Agoston	328	133	
	AE13	4,757,538	07/1988	Zink	381	7	
	AF13	4,768,187	08/1988	Marshall	370	69.1	
	AG13	4,769,612	09/1988	Tamakoshi et al.	328	167	
	AH13	4,785,463	11/1988	Janc et al.	375	1	
	AI13	4,791,584	12/1988	Greivenkamp, Jr.	364	525	

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	AJ13	EP 0 817 369 A2&A3	01/1998	EP	H03D	7/00	N/A
	AK13	WO 91/18445 A1	11/1991	PCT	H03D	7/18	N/A
	AL13	WO 99/23755 A1	05/1999	PCT	H03D	7/16	N/A
	AM13	JP 56-114451	09/1981	JP	H04B	7/02	No

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	AN	<u>13</u>	Hospitalier, E., "Instruments for Recording and Observing Rapidly Varying Phenomena," <i>Science Abstracts</i> , IEE, Vol. VII, pp. 22-23 (1904).
	AO	<u>13</u>	Howard, I.M. and Swansson, N.S., "Demodulating High Frequency Resonance Signals for Bearing Fault Detection," <i>The Institution of Engineers Australia Vibration and Noise Conference</i> , Institution of Engineers, Australia, pp. 115-121 (September 18-20, 1990).
	AP	<u>13</u>	Hu, X., <i>A Switched-Current Sample-and-Hold Amplifier for FM Demodulation</i> , Thesis for Master of Applied Science, Dept. of Electrical and Computer Engineering, University of Toronto, UMI Dissertation Services, pp. 1-64 (1995).
	AQ	<u>13</u>	Hung, H-L. A. et al., "Characterization of Microwave Integrated Circuits Using An Optical Phase-Locking and Sampling System," <i>IEEE MTT-S Digest</i> , IEEE, pp. 507-510 (1991).
	AR	<u>13</u>	Hurst, P.J., "Shifting the Frequency Response of Switched-Capacitor Filters by Nonuniform Sampling," <i>IEEE Transactions on Circuits and Systems</i> , IEEE Circuits and Systems Society, Vol. 38, No. 1, pp. 12-19 (January 1991).

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	AA14	4,801,823	01/1989	Yokoyama	307	353	
	AB14	4,806,790	02/1989	Sone	307	353	
	AC14	4,810,904	03/1989	Crawford	307	353	
	AD14	4,810,976	03/1989	Cowley et al.	331	117 R	
	AE14	4,811,362	03/1989	Yester, Jr. et al.	375	75	
	AF14	4,819,252	04/1989	Christopher	375	122	
	AG14	4,833,445	05/1989	Buchele	341	118	
	AH14	4,862,121	08/1989	Hochschild et al.	333	173	
	AI14	4,868,654	09/1989	Juri et al.	358	133	

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	AJ14	JP 8-32556	02/1996	JP	H04L	1/04	No
	AK14	JP 8-139524	05/1996	JP	H03D	7/00	No
	AL14	JP 59-144249	08/1984	JP	H04L	27/00	No
	AM14	JP 63-54002	03/1988	JP	H03B	19/114	No

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	AN	<u>14</u>	Itakura, T., "Effects of the sampling pulse width on the frequency characteristics of a sample-and-hold circuit," <i>IEE Proceedings Circuits, Devices and Systems</i> , IEE, Vol. 141, No. 4, pp. 328-336 (August 1994).
	AO	<u>14</u>	Janssen, J.M.L., "An Experimental 'Stroboscopic' Oscilloscope for Frequencies up to about 50 Mc/s: I. Fundamentals," <i>Philips Technical Review</i> , Philips Research Laboratories, Vol. 12, No. 2, pp. 52-59 (August 1950).
	AP	<u>14</u>	Janssen, J.M.L. and Michels, A.J., "An Experimental 'Stroboscopic' Oscilloscope for Frequencies up to about 50 Mc/s: II. Electrical Build-Up," <i>Philips Technical Review</i> , Philips Research Laboratories, Vol. 12, No. 3, pp. 73-82 (September 1950).
	AQ	<u>14</u>	Jondral, V.F. et al., "Doppler Profiles for Communication Satellites," <i>Frequenz</i> , Herausberger, pp. 111-116 (May-June 1996).
	AR	<u>14</u>	Kaleh, G.K., "A Frequency Diversity Spread Spectrum System for Communication in the Presence of In-band Interference," <i>1995 IEEE Globecom</i> , IEEE Communications Society, pp. 66-70 (1995).

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	AA15	4,870,659	09/1989	Oishi et al.	375	82	
	AB15	4,871,987	10/1989	Kawase	332	100	
	AC15	4,885,587	12/1989	Wiegand et al.	42	14	
	AD15	4,885,756	12/1989	Fontanes et al.	375	82	
	AE15	4,888,557	12/1989	Puckette, IV et al.	329	341	
	AF15	4,890,302	12/1989	Muiliwijk	375	80	
	AG15	4,893,316	01/1990	Janc et al.	375	44	
	AH15	4,893,341	01/1990	Gehring	381	7	
	AI15	4,894,766	01/1990	De Agro	363	159	

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	AJ15	JP 6-237276	08/1994	JP	H04L	27/20	No
	AK15	JP 8-23359	01/1996	JP	H04L	27/20	No
	AL15	JP 47-2314	02/1972	JP	---	---	Yes (Doc. AP53)
	AM15	JP 58-7903	01/1983	JP	H03C	1/02	Partial (Doc. AQ53)

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	AN	15	Karasawa, Y. et al., "A New Prediction Method for Tropospheric Scintillation on Earth-Space Paths," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE Antennas and Propagation Society, Vol. 36, No. 11, pp. 1608-1614 (November 1988).
	AO	15	Kirsten, J. and Fleming, J., "Undersampling reduces data-acquisition costs for select applications," <i>EDN</i> , Cahners Publishing, Vol. 35, No. 13, pp. 217-222, 224, 226-228 (June 21, 1990).
	AP	15	Lam, W.K. et al., "Measurement of the Phase Noise Characteristics of an Unlocked Communications Channel Identifier," <i>Proceedings Of the 1993 IEEE International Frequency Control Symposium</i> , IEEE, pp. 283-288 (June 2-4, 1993).
	AQ	15	Lam, W.K. et al., "Wideband sounding of 11.6 Ghz transhorizon channel," <i>Electronics Letters</i> , IEE, Vol. 30, No. 9, pp. 738-739 (April 28, 1994).
	AR	15	Larkin, K.G., "Efficient demodulator for bandpass sampled AM signals," <i>Electronics Letters</i> , IEE, Vol. 32, No. 2, pp. 101-102 (January 18, 1996).

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	AB16	4,902,979	02/1990	Puckette, IV	329	343	
	AC16	4,908,579	03/1990	Tawfik <i>et al.</i>	328	167	
	AD16	4,910,752	03/1990	Yester, Jr. <i>et al.</i>	375	75	
	AE16	4,914,405	04/1990	Wells	331	25	
	AF16	4,920,510	04/1990	Senderowicz <i>et al.</i>	364	825	
	AG16	4,922,452	05/1990	Larsen <i>et al.</i>	365	45	
	AH16	4,931,921	06/1990	Anderson	363	163	
	AI16	4,944,025	07/1990	Gehring <i>et al.</i>	455	207	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ16	JP 58-133004	08/1983	JP	H03D	1/00	No
	AK16	JP 60-58705	04/1985	JP	H03D	7/00	No
	AL16	JP 4-123614	04/1992	JP	H03K	19/0175	No
	AM16	JP 4-127601	04/1992	JP	H03D	7/00	No

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	AN	16	Lau, W.H. <i>et al.</i> , "Analysis of the Time Variant Structure of Microwave Line-of-sight Multipath Phenomena," <i>IEEE Global Telecommunications Conference & Exhibition</i> , IEEE, pp. 1707-1711 (November 28 - December 1, 1988).
	AO	16	Lau, W.H. <i>et al.</i> , "Improved Prony Algorithm to Identify Multipath Components," <i>Electronics Letters</i> , IEE, Vol. 23, No. 20, pp. 1059-1060 (September 24, 1987).
	AP	16	Lesage, P. and Audoin, C., "Effect of Dead-Time on the Estimation of the Two-Sample Variance," <i>IEEE Transactions on Instrumentation and Measurement</i> , IEEE Instrumentation and Measurement Society, Vol. IM-28, No. 1, pp. 6-10 (March 1979).
	AQ	16	Liechti, C.A., "Performance of Dual-gate GaAs MESFET's as Gain-Controlled Low-Noise Amplifiers and High-Speed Modulators," <i>IEEE Transactions on Microwave Theory and Techniques</i> , IEEE Microwave Theory and Techniques Society, Vol. MTT-23, No. 6, pp. 461-469 (June 1975).
	AR	16	Linnenbrink, T.E. <i>et al.</i> , "A One Gigasample Per Second Transient Recorder," <i>IEEE Transactions on Nuclear Science</i> , IEEE Nuclear and Plasma Sciences Society, Vol. NS-26, No. 4, pp. 4443-4449 (August 1979).

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	AA17	4,955,079	09/1990	Connerney et al.	455	325	
	AB17	4,965,467	10/1990	Bilteijst	307	352	
	AC17	4,967,160	10/1990	Quievy et al.	328	16	
	AD17	4,970,703	11/1990	Hariharan et al.	367	138	
	AE17	4,982,353	01/1991	Jacob et al.	364	724.10	
	AF17	4,984,077	01/1991	Uchida	358	140	
	AG17	4,995,055	02/1991	Weinberger et al.	375	5	
	AH17	5,003,621	03/1991	Gailus	455	209	
	AI17	5,005,169	04/1991	Bronder et al.	370	76	

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	AJ17	JP 5-175730	07/1993	JP	H03D	1/00	No
	AK17	JP 5-175734	07/1993	JP	H03D	3/00	No
	AL17	JP 7-154344	06/1995	JP	H04B	14/06	No
	AM17	JP 7-307620	11/1995	JP	H03D	1/18	No

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	AN	<u>17</u>	Liou, M.L., "A Tutorial on Computer-Aided Analysis of Switched-Capacitor Circuits," <i>Proceedings of the IEEE</i> , IEEE, Vol. 71, No. 8, pp. 987-1005 (August 1983).
	AO	<u>17</u>	Lo, P. et al., "Coherent Automatic Gain Control," <i>IEE Colloquium on Phase Locked Techniques</i> , IEE, pp. 2/1-2/6 (March 26, 1980).
	AP	<u>17</u>	Lo, P. et al., "Computation of Rain Induced Scintillations on Satellite Down-Links at Microwave Frequencies," <i>Third International Conference on Antennas and Propagation (ICAP 83)</i> , pp. 127-131 (April 12-15, 1983).
	AQ	<u>17</u>	Lo, P.S.L.O. et al., "Observations of Amplitude Scintillations on a Low-Elevation Earth-Space Path," <i>Electronics Letters</i> , IEE, Vol. 20, No. 7, pp. 307-308 (March 29, 1984).
	AR	<u>17</u>	Madani, K. and Aithison, C.S., "A 20 Ghz Microwave Sampler," <i>IEEE Transactions on Microwave Theory and Techniques</i> , IEEE Microwave Theory and Techniques Society, Vol. 40, No. 10, pp. 1960-1963 (October 1992).

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	AA18	5,006,810	04/1991	Popescu	328	167	
	AB18	5,010,585	04/1991	Garcia	455	118	
	AC18	5,014,304	05/1991	Nicollini et al.	379	399	
	AD18	5,015,963	05/1991	Sutton	329	361	
	AE18	5,017,924	05/1991	Guiberteau et al.	342	195	
	AF18	5,020,149	05/1991	Hemmie	455	325	
	AG18	5,020,154	05/1991	Zierhut	455	608	
	AH18	5,052,050	09/1991	Collier et al.	455	296	
	AI18	5,065,409	11/1991	Hughes et al.	375	91	

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	AJ18	JP 55-66057	05/1980	JP	G06K	7/10	No
	AK18	JP 63-65587	03/1988	JP	G06K	7/10	No
	AL18	JP 63-153691	06/1988	JP	G06K	17/00	No
	AM18	EP 0 276 130 A2&A3	07/1988	EP	H03D	7/00	N/A

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	AN	<u>18</u>	Marsland, R.A. et al., "130 Ghz GaAs monolithic integrated circuit sampling head," <i>Appl. Phys. Lett.</i> , American Institute of Physics, Vol. 55, No. 6, pp. 592-594 (August 7, 1989).
	AO	<u>18</u>	Martin, K. and Sedra, A.S., "Switched-Capacitor Building Blocks for Adaptive Systems," <i>IEEE Transactions on Circuits and Systems</i> , IEEE Circuits and Systems Society, Vol. CAS-28, No. 6, pp. 576-584 (June 1981).
	AP	<u>18</u>	Marzano, F.S. and d'Auria, G., "Model-based Prediction of Amplitude Scintillation variance due to Clear-Air Tropospheric Turbulence on Earth-Satellite Microwave Links," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE Antennas and Propagation Society, Vol. 46, No. 10, pp. 1506-1518 (October 1998).
	AQ	<u>18</u>	Matricciani, E., "Prediction of fade durations due to rain in satellite communication systems," <i>Radio Science</i> , American Geophysical Union, Vol. 32, No. 3, pp. 935-941 (May-June 1997).
	AR	<u>18</u>	McQueen, J.G., "The Monitoring of High-Speed Waveforms," <i>Electronic Engineering</i> , Morgan Brothers Limited, Vol. XXIV, No. 296, pp. 436-441 (October 1952).

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	AA19	5,083,050	01/1992	Vasile	307	529	
	AB19	5,091,921	02/1992	Minami	375	88	
	AC19	5,095,533	03/1992	Loper et al.	455	245	
	AD19	5,095,536	03/1992	Loper	455	324	
	AE19	5,111,152	05/1992	Makino	329	300	
	AF19	5,113,094	05/1992	Grace et al.	307	529	
	AG19	5,113,129	05/1992	Hughes	323	316	
	AH19	5,122,765	06/1992	Pataut	332	105	
	AI19	5,124,592	06/1992	Hagino	307	520	

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	AJ19	WO 95/01006 A1	01/1995	PCT	H03M	1/66	N/A
	AK19	WO 97/08839 A2&A3	03/1997	PCT	H04B	1/04	N/A
	AL19						Yes No
	AM19						Yes No

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	AN	<u>19</u>	Merkelo, J. and Hall, R.D., "Broad-Band Thin-Film Signal Sampler," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. SC-7, No. 1, pp. 50-54 (February 1972).
	AO	<u>19</u>	Merlo, U. et al., "Amplitude Scintillation Cycles in a Sirio Satellite-Earth Link," <i>Electronics Letters</i> , IEE, Vol. 21, No. 23, pp. 1094-1096 (November 7, 1985).
	AP	<u>19</u>	Morris, D., "Radio-holographic reflector measurement of the 30-m millimeter radio telescope at 22 Ghz with a cosmic signal source," <i>Astronomy and Astrophysics</i> , Springer-Verlag, Vol. 203, No. 2, pp. 399-406 (September (II) 1988).
	AQ	<u>19</u>	Moulsley, T.J. et al., "The efficient acquisition and processing of propagation statistics," <i>Journal of the Institution of Electronic and Radio Engineers</i> , IERE, Vol. 55, No. 3, pp. 97-103 (March 1985).
	AR	<u>19</u>	Ndzi, D. et al., "Wide-Band Statistical Characterization of an Over-the-Sea Experimental Transhorizon Link," <i>IEE Colloquium on Radio Communications at Microwave and Millimetre Wave Frequencies</i> , IEE, pp. 1/1-1/6 (December 16, 1996).

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	AA20	5,136,267	08/1992	Cabot	333	174	
	AB20	5,140,705	08/1992	Kosuga	455	318	
	AC20	5,150,124	09/1992	Moore et al.	342	68	
	AD20	5,151,661	09/1992	Caldwell et al.	328	14	
	AE20	5,159,710	10/1992	Cusdin	455	304	
	AF20	5,170,414	12/1992	Silvian	375	59	
	AG20	5,172,070	12/1992	Hiraiwa et al.	329	304	
	AH20	5,191,459	03/1993	Thompson et al.	359	133	
	AI20	5,204,642	04/1993	Ashgar et al.	331	135	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ20						Yes No
	AK20						Yes No
	AL20						Yes No
	AM20						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>20</u>	Ndzi, D. et al., "Wideband Statistics of Signal Levels and Doppler Spread on an Over-The-Sea Transhorizon Link," <i>IEE Colloquium on Propagation Characteristics and Related System Techniques for Beyond Line-of-Sight Radio</i> , IEE, pp. 9/1-9/6 (November 24, 1997).
	AO	<u>20</u>	"New zero IF chipset from Philips," <i>Electronic Engineering</i> , United News & Media, Vol. 67, No. 825, p. 10 (September 1995).
	AP	<u>20</u>	Ohara, H. et al., "First monolithic PCM filter cuts cost of telecomm systems," <i>Electronic Design</i> , Hayden Publishing Company, Vol. 27, No. 8, pp. 130-135 (April 12, 1979).
	AQ	<u>20</u>	Oppenheim, A.V. et al., <i>Signals and Systems</i> , Prentice-Hall, pp. 527-531 and 561-562 (1983).
	AR	<u>20</u>	Ortgies, G., "Experimental Parameters Affecting Amplitude Scintillation Measurements on Satellite Links," <i>Electronics Letters</i> , IEE, Vol. 21, No. 17, pp. 771-772 (August 15, 1985).

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	AA21	5,212,827	05/1993	Meszko et al.	455	219	
	AB21	5,214,787	05/1993	Karkota, Jr.	455	3.2	
	AC21	5,220,583	06/1993	Solomon	375	82	
	AD21	5,220,680	06/1993	Lee	455	102	
	AE21	5,222,144	06/1993	Whikehart	381	15	
	AF21	5,230,097	07/1993	Currie et al.	455	226.1	
	AG21	5,239,686	08/1993	Downey	455	78	
	AH21	5,241,561	08/1993	Barnard	375	1	
	AI21	5,249,203	09/1993	Loper	375	97	

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	AJ21						Yes No
	AK21						Yes No
	AL21						Yes No
	AM21						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>21</u>	Pärssinen et al., "A 2-GHz Subharmonic Sampler for Signal Downconversion," <i>IEEE Transactions on Microwave Theory and Techniques</i> , IEEE, Vol. 45, No. 12, 7 pages (December 1997).
	AO	<u>21</u>	Peeters, G. et al., "Evaluation of Statistical Models for Clear-Air Scintillation Prediction Using Olympus Satellite Measurements," <i>International Journal of Satellite Communications</i> , John Wiley and Sons, Vol. 15, No. 2, pp. 73-88 (March-April 1997).
	AP	<u>21</u>	Perrey, A.G. and Schoenwetter, H.K., <i>NBS Technical Note 1121: A Schottky Diode Bridge Sampling Gate</i> , U.S. Dept. of Commerce, pp. 1-14 (May 1980).
	AQ	<u>21</u>	Poulton, K. et al., "A 1-GHz 6-bit ADC System," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. SC-22, No. 6, pp. 962-969 (December 1987).
	AR	<u>21</u>	Press Release, "Parkervision, Inc. Announces Fiscal 1993 Results," Lippert/Heilshorn and Associates, 2 Pages (April 6, 1994).

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	AA22	5,251,218	10/1993	Stone et al.	370	120	
	AB22	5,251,232	10/1993	Nonami	375	5	
	AC22	5,260,970	11/1993	Henry et al.	375	10	
	AD22	5,263,194	11/1993	Ragan	455	316	
	AE22	5,263,196	11/1993	Jasper	455	324	
	AF22	5,267,023	11/1993	Kawasaki	358	23	
	AG22	5,278,826	01/1994	Murphy et al.	370	76	
	AH22	5,282,023	01/1994	Scarpa	358	36	
	AI22	5,287,516	02/1994	Schaub	375	88	

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	AJ22						Yes No
	AK22						Yes No
	AL22						Yes No
	AM22						Yes No

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	AN	<u>22</u>	Press Release, "Parkervision, Inc. Announces the Appointment of Michael Baker to the New Position of National Sales Manager," Lippert/Heilshorn and Associates, 1 Page (April 7, 1994).
	AO	<u>22</u>	Press Release, "Parkervision's Cameraman Well-Received By Distance Learning Market," Lippert/Heilshorn and Associates, 2 Pages (April 8, 1994).
	AP	<u>22</u>	Press Release, "Parkervision, Inc. Announces First Quarter Financial Results," Lippert/Heilshorn and Associates, 2 Pages (April 26, 1994).
	AQ	<u>22</u>	Press Release, "Parkervision, Inc. Announces The Retirement of William H. Fletcher, Chief Financial Officer," Lippert/Heilshorn and Associates, 1 Page (May 11, 1994).
	AR	<u>22</u>	Press Release, "Parkervision, Inc. Announces New Cameraman System II™ At Infocomm Trade Show," Lippert/Heilshorn and Associates, 3 Pages (June 9, 1994).

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	AA23	5,293,398	03/1994	Hamao <i>et al.</i>	375	1	
	AB23	5,303,417	04/1994	Laws	455	314	
	AC23	5,307,517	04/1994	Rich	455	306	
	AD23	5,315,583	05/1994	Murphy <i>et al.</i>	370	18	
	AE23	5,321,852	06/1994	Seong	455	182.1	
	AF23	5,325,204	06/1994	Scarpa	348	607	
	AG23	5,337,014	08/1994	Najle <i>et al.</i>	324	613	
	AH23	5,339,054	08/1994	Taguchi	332	100	
	AI23	5,339,459	08/1994	Schiltz <i>et al.</i>	455	333	

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	AJ23						Yes No
	AK23						Yes No
	AL23						Yes No
	AM23						Yes No

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	AN	<u>23</u>	Press Release, "Parkervision, Inc. Announces Appointments to its National Sales Force," Lippert/Heilshorn and Associates, 2 Pages (June 17, 1994).
	AO	<u>23</u>	Press Release, "Parkervision, Inc. Announces Second Quarter and Six Months Financial Results," Lippert/Heilshorn and Associates, 3 Pages (August 9, 1994).
	AP	<u>23</u>	Press Release, "Parkervision, Inc. Announces Third Quarter and Nine Months Financial Results," Lippert/Heilshorn and Associates, 3 Pages (October 28, 1994).
	AQ	<u>23</u>	Press Release, "Parkervision, Inc. Announces First Significant Dealer Sale of Its <i>Cameraman</i> ® System II," Lippert/Heilshorn and Associates, 2 Pages (November 7, 1994).
	AR	<u>23</u>	Press Release, "Parkervision, Inc. Announces Fourth Quarter and Year End Results," Lippert/Heilshorn and Associates, 2 Pages (March 1, 1995).

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	AA24	5,355,114	10/1994	Sutterlin et al.	340	310 A	
	AB24	5,361,408	11/1994	Watanabe et al.	455	324	
	AC24	5,369,800	11/1994	Takagi et al.	455	59	
	AD24	5,375,146	12/1994	Chalmers	375	103	
	AE24	5,379,040	01/1995	Mizomoto et al.	341	143	
	AF24	5,379,141	01/1995	Thompson et al.	359	125	
	AG24	5,388,063	02/1995	Takatori et al.	364	724.17	
	AH24	5,390,364	02/1995	Webster et al.	455	52.3	
	AI24	5,400,084	03/1995	Scarpa	348	624	

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	AJ24						Yes No
	AK24						Yes No
	AL24						Yes No
	AM24						Yes No

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	AN	<u>24</u>	Press Release, "Parkervision, Inc. Announces Joint Product Developments With VTEL," Lippert/Heilshorn and Associates, 2 Pages (March 21, 1995).
	AO	<u>24</u>	Press Release, "Parkervision, Inc. Announces First Quarter Financial Results," Lippert/Heilshorn and Associates, 3 Pages (April 28, 1995).
	AP	<u>24</u>	Press Release, "Parkervision Wins Top 100 Product Districts' Choice Award," Parkervision Marketing and Manufacturing Headquarters, 1 Page (June 29, 1995).
	AQ	<u>24</u>	Press Release, "Parkervision National Sales Manager Next President of USDLA," Parkervision Marketing and Manufacturing Headquarters, 1 Page (July 6, 1995).
	AR	<u>24</u>	Press Release, "Parkervision Granted New Patent," Parkervision Marketing and Manufacturing Headquarters, 1 Page (July 21, 1995).

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	AA25	5,404,127	04/1995	Lee et al.	340	310.02	
	AB25	5,410,541	04/1995	Hotto	370	76	
	AC25	5,410,743	04/1995	Seely et al.	455	326	
	AD25	5,412,352	05/1995	Graham	332	103	
	AE25	5,416,803	05/1995	Janer	375	324	
	AF25	5,422,913	06/1995	Wilkinson	375	347	
	AG25	5,423,082	06/1995	Cygan et al.	455	126	
	AH25	5,428,638	06/1995	Cioffi et al.	375	224	
	AI25	5,428,640	06/1995	Townley	375	257	

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	AJ25						Yes No
	AK25						Yes No
	AL25						Yes No
	AM25						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>25</u>	Press Release, "Parkervision, Inc. Announces Second Quarter and Six Months Financial Results," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (July 31, 1995).
	AO	<u>25</u>	Press Release, "Parkervision, Inc. Expands Its Cameraman System II Product Line," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (September 22, 1995).
	AP	<u>25</u>	Press Release, "Parkervision Announces New Camera Control Technology," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (October 25, 1995).
	AQ	<u>25</u>	Press Release, "Parkervision, Inc. Announces Completion of VTEL/Parkervision Joint Product Line," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (October 30, 1995).
	AR	<u>25</u>	Press Release, "Parkervision, Inc. Announces Third Quarter and Nine Months Financial Results," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (October 30, 1995).

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INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.
1744.0630003APPLICATION NO.
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2634**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA26	5,434,546	07/1995	Palmer	332	151	
	AB26	5,438,692	08/1995	Mohindra	455	324	
	AC26	5,444,415	08/1995	Dent et al.	329	302	
	AD26	5,444,416	08/1995	Ishikawa et al.	329	341	
	AE26	5,444,865	08/1995	Heck et al.	455	86	
	AF26	5,446,421	08/1995	Kechkaylo	332	100	
	AG26	5,446,422	08/1995	Mattila et al.	332	103	
	AH26	5,448,602	09/1995	Ohmori et al.	375	347	
	AI26	5,451,899	09/1995	Lawton	329	302	

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ26						Yes No
	AK26						Yes No
	AL26						Yes No
	AM26						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>26</u>	Press Release, "Parkervision's Cameraman Personal Locator Camera System Wins Telecon XV Award," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (November 1, 1995).
	AO	<u>26</u>	Press Release, "Parkervision, Inc. Announces Purchase Commitment From VTEL Corporation," Parkervision Marketing and Manufacturing Headquarters, 1 Page (February 26, 1996).
	AP	<u>26</u>	Press Release, "ParkerVision, Inc. Announces Fourth Quarter and Year End Results," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (February 27, 1996).
	AQ	<u>26</u>	Press Release, "ParkerVision, Inc. Expands its Product Line," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (March 7, 1996).
	AR	<u>26</u>	Press Release, "ParkerVision Files Patents for its Research of Wireless Technology," Parkervision Marketing and Manufacturing Headquarters, 1 Page (March 28, 1996).

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	AA27	5,454,007	09/1995	Dutta	375	322	
	AB27	5,454,009	09/1995	Fruit <i>et al.</i>	372	202	
	AC27	5,463,356	10/1995	Palmer	332	117	
	AD27	5,463,357	10/1995	Hobden	332	151	
	AE27	5,465,071	11/1995	Kobayashi <i>et al.</i>	329	315	
	AF27	5,465,410	11/1995	Hiben <i>et al.</i>	455	266	
	AG27	5,465,415	11/1995	Bien	455	326	
	AH27	5,471,162	11/1995	McEwan	327	92	
	AI27	5,479,120	12/1995	McEwan	327	91	

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ27						Yes No
	AK27						Yes No
	AL27						Yes No
	AM27						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>27</u>	Press Release, "Parkervision, Inc. Announces First Significant Sale of Its Cameraman® Three-Chip System," Parkervision Marketing and Manufacturing Headquarters, 2 pages (April 12, 1996).
	AO	<u>27</u>	Press Release, "Parkervision, Inc. Introduces New Product Line For Studio Production Market," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (April 15, 1996).
	AP	<u>27</u>	Press Release, "Parkervision, Inc. Announces Private Placement of 800,000 Shares," Parkervision Marketing and Manufacturing Headquarters, 1 Page (April 15, 1996).
	AQ	<u>27</u>	Press Release, "Parkervision, Inc. Announces First Quarter Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (April 30, 1996).
	AR	<u>27</u>	Press Release, "ParkerVision's New Studio Product Wins Award," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (June 5, 1996).

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	AA28	5,479,447	12/1995	Chow et al.	375	260	
	AB28	5,483,193	01/1996	Kennedy et al.	329	300	
	AC28	5,483,549	01/1996	Weinberg et al.	375	200	
	AD28	5,483,691	01/1996	Heck et al.	455	234.2	
	AE28	5,490,173	02/1996	Whikehart et al.	375	316	
	AF28	5,493,581	02/1996	Young et al.	375	350	
	AG28	5,493,721	02/1996	Reis	455	339	
	AH28	5,495,200	02/1996	Kwan et al.	327	554	
	AI28	5,495,202	02/1996	Hsu	327	113	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ28						Yes No
	AK28						Yes No
	AL28						Yes No
	AM28						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>28</u>	Press Release, "Parkervision, Inc. Announces Second Quarter and Six Months Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (August 1, 1996).
	AO	<u>28</u>	Press Release, "Parkervision, Inc. Announces Third Quarter and Nine Months Financial Results," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (October 29, 1996).
	AP	<u>28</u>	Press Release, "PictureTel and ParkerVision Sign Reseller Agreement," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (October 30, 1996).
	AQ	<u>28</u>	Press Release, "CLI and ParkerVision Bring Enhanced Ease-of-Use to Videoconferencing," CLI/Parkervision, 2 Pages (January 20, 1997).
	AR	<u>28</u>	Press Release, "Parkervision, Inc. Announces Fourth Quarter and Year End Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (February 27, 1997).

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	AA29	5,495,500	02/1996	Jovanovich et al.	375	206	
	AB29	5,499,267	03/1996	Ohe et al.	375	206	
	AC29	5,500,758	03/1996	Thompson et al.	359	189	
	AD29	5,517,688	05/1996	Fajen et al.	455	333	
	AE29	5,519,890	05/1996	Pinckley	455	307	
	AF29	5,523,719	06/1996	Longo et al.	327	557	
	AG29	5,523,726	06/1996	Kroeger et al.	332	103	
	AH29	5,523,760	06/1996	McEwan	342	89	
	AI29	5,539,770	07/1996	Ishigaki	375	206	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ29						Yes No
	AK29						Yes No
	AL29						Yes No
	AM29						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>29</u>	Press Release, "Parkervision, Inc. Announces First Quarter Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (April 29, 1997).
	AO	<u>29</u>	Press Release, "NEC and Parkervision Make Distance Learning Closer," NEC America, 2 Pages (June 18, 1997).
	AP	<u>29</u>	Press Release, "Parkervision Supplies JPL with Robotic Cameras, Cameraman Shot Director for Mars Mission," Parkervision Marketing and Manufacturing Headquarters, 2 pages (July 8, 1997).
	AQ	<u>29</u>	Press Release, "ParkerVision and IBM Join Forces to Create Wireless Computer Peripherals," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (July 23, 1997).
	AR	<u>29</u>	Press Release, "ParkerVision, Inc. Announces Second Quarter and Six Months Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (July 31, 1997).

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	AA30	5,555,453	09/1996	Kajimoto <i>et al.</i>	455	266	
	AB30	5,557,641	09/1996	Weinberg	375	295	
	AC30	5,557,642	09/1996	Williams	375	316	
	AD30	5,579,341	11/1996	Smith <i>et al.</i>	375	267	
	AE30	5,579,347	11/1996	Lindquist <i>et al.</i>	375	346	
	AF30	5,584,068	12/1996	Mohindra	455	324	
	AG30	5,592,131	01/1997	Labreche <i>et al.</i>	332	103	
	AH30	5,602,847	02/1997	Pagano <i>et al.</i>	370	484	
	AI30	5,602,868	02/1997	Wilson	375	219	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ30						Yes No
	AK30						Yes No
	AL30						Yes No
	AM30						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	30	Press Release, "Parkervision, Inc. Announces Private Placement of 990,000 Shares," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (September 8, 1997).
	AO	30	Press Release, "Wal-Mart Chooses Parkervision for Broadcast Production," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (October 24, 1997).
	AP	30	Press Release, "Parkervision, Inc. Announces Third Quarter Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (October 30, 1997).
	AQ	30	Press Release, "ParkerVision Announces Breakthrough in Wireless Radio Frequency Technology," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (December 10, 1997).
	AR	30	Press Release, "Parkervision, Inc. Announces the Appointment of Joseph F. Skovron to the Position of Vice President, Licensing - Wireless Technologies," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (January 9, 1998).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA31	5,604,732	02/1997	Kim et al.	370	342	
	AB31	5,608,531	03/1997	Honda et al.	386	1	
	AC31	5,610,946	03/1997	Tanaka et al.	375	269	
	AD31	RE 35,494	04/1997	Nicollini	327	554	
	AE31	5,617,451	04/1997	Mimura et al.	375	340	
	AF31	5,619,538	04/1997	Sempel et al.	375	328	
	AG31	5,621,455	04/1997	Rogers et al.	348	6	
	AH31	5,630,227	05/1997	Bella et al.	455	324	
	AI31	5,640,415	06/1997	Pandula	375	202	

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ31						Yes No
	AK31						Yes No
	AL31						Yes No
	AM31						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>31</u>	Press Release, "Parkervision Announces Existing Agreement with IBM Terminates-- Company Continues with Strategic Focus Announced in December," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (January 27, 1998).
	AO	<u>31</u>	Press Release, "Laboratory Tests Verify Parkervision Wireless Technology," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (March 3, 1998).
	AP	<u>31</u>	Press Release, "Parkervision, Inc. Announces Fourth Quarter and Year End Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (March 5, 1998).
	AQ	<u>31</u>	Press Release, "Parkervision Awarded Editors' Pick of Show for NAB 98," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (April 15, 1998).
	AR	<u>31</u>	Press Release, "Parkervision Announces First Quarter Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (May 4, 1998).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA32	5,640,424	06/1997	Banavong et al.	375	316	
	AB32	5,640,428	06/1997	Abe et al.	375	334	
	AC32	5,640,698	06/1997	Shen et al.	455	323	
	AD32	5,648,985	07/1997	Bjerede et al.	375	219	
	AE32	5,650,785	07/1997	Rodal	342	357	
	AF32	5,661,424	08/1997	Tang	327	105	
	AG32	5,663,878	09/1997	Walker	363	159	
	AH32	5,663,986	09/1997	Striffler	375	260	
	AI32	5,668,836	09/1997	Smith et al.	375	316	

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ32						Yes No
	AK32						Yes No
	AL32						Yes No
	AM32						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>32</u>	Press Release, "Parkervision 'DIRECT2DATA' Introduced in Response to Market Demand," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (July 9, 1998).
	AO	<u>32</u>	Press Release, "Parkervision Expands Senior Management Team," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (July 29, 1998).
	AP	<u>32</u>	Press Release, "Parkervision Announces Second Quarter and Six Month Financial Results," Parkervision Marketing and Manufacturing Headquarters, 4 Pages (July 30, 1998).
	AQ	<u>32</u>	Press Release, "Parkervision Announces Third Quarter and Nine Month Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (October 30, 1998).
	AR	<u>32</u>	Press Release, "Questar Infocomm, Inc. Invests \$5 Million in Parkervision Common Stock," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (December 2, 1998).

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	AA33	5,680,078	10/1997	Ariie	332	178	
	AB33	5,680,418	10/1997	Croft et al.	375	346	
	AC33	5,689,413	11/1997	Jaramillo et al.	363	146	
	AD33	5,699,006	12/1997	Zelev et al.	327	341	
	AE33	5,705,955	01/1998	Freeburg et al.	331	14	
	AF33	5,710,998	01/1998	Opas	455	324	
	AG33	5,714,910	02/1998	Skoczen et al.	331	3	
	AH33	5,715,281	02/1998	Bly et al.	375	344	
	AI33	5,721,514	02/1998	Crockett et al.	331	3	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ33						Yes No
	AK33						Yes No
	AL33						Yes No
	AM33						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>33</u>	Press Release, "Parkervision Adds Two New Directors," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (March 5, 1999).
	AO	<u>33</u>	Press Release, "Parkervision Announces Fourth Quarter and Year End Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (March 5, 1999).
	AP	<u>33</u>	Press Release, "Joint Marketing Agreement Offers New Automated Production Solution," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (April 13, 1999).
	AQ	<u>33</u>	"Project COST 205: Scintillations in Earth-satellite links," <i>Alta Frequenza: Scientific Review in Electronics</i> , AEI, Vol. LIV, No. 3, pp. 209-211 (May-June, 1985).
	AR	<u>33</u>	Razavi, B., <i>RF Microelectronics</i> , Prentice-Hall, pp. 147-149 (1998).

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	AA34	5,724,002	03/1998	Hulick	329	361	
	AB34	5,724,653	03/1998	Baker et al.	455	296	
	AC34	5,729,577	03/1998	Chen	375	334	
	AD34	5,729,829	03/1998	Talwar et al.	455	63	
	AE34	5,732,333	03/1998	Cox et al.	455	126	
	AF34	5,736,895	04/1998	Yu et al.	327	554	
	AG34	5,737,035	04/1998	Rotzoll	348	725	
	AH34	5,742,189	04/1998	Yoshida et al.	327	113	
	AI34	5,748,683	05/1998	Smith et al.	375	347	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ34						Yes No
	AK34						Yes No
	AL34						Yes No
	AM34						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>34</u>	Reeves, R.J.D., "The Recording and Collocation of Waveforms (Part 1)," <i>Electronic Engineering</i> , Morgan Brothers Limited, Vol. 31, No. 373, pp. 130-137 (March 1959).
	AO	<u>34</u>	Reeves, R.J.D., "The Recording and Collocation of Waveforms (Part 2)," <i>Electronic Engineering</i> , Morgan Brothers Limited, Vol. 31, No. 374, pp. 204-212 (April 1959).
	AP	<u>34</u>	Rein, H.M. and Zahn, M., "Subnanosecond-Pulse Generator with Variable Pulsewidth Using Avalanche Transistors," <i>Electronics Letters</i> , IEE, Vol. 11, No. 1, pp. 21-23 (January 9, 1975).
	AQ	<u>34</u>	Riad, S.M. and Nahman, N.S., "Modeling of the Feed-through Wideband (DC to 12.4 Ghz) Sampling-Head," <i>IEEE MTT-S International Microwave Symposium Digest</i> , IEEE, pp. 267-269 (June 27-29, 1978).
	AR	<u>34</u>	Rizzoli, V. et al., "Computer-Aided Noise Analysis of MESFET and HEMT Mixers," <i>IEEE Transactions on Microwave Theory and Techniques</i> , IEEE, Vol. 37, No. 9, pp. 1401-1410 (September 1989).

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	AA35	RE 35,829	06/1998	Sanderford, Jr.	375	200	
	AB35	5,760,645	06/1998	Comte et al.	329	304	
	AC35	5,764,087	06/1998	Clark	327	105	
	AD35	5,767,726	06/1998	Wang	327	356	
	AE35	5,768,118	06/1998	Faulk et al.	363	72	
	AF35	5,771,442	06/1998	Wang et al.	455	93	
	AG35	5,777,692	07/1998	Ghosh	348	725	
	AH35	5,777,771	07/1998	Smith	359	180	
	AI35	5,786,844	07/1998	Rogers et al.	348	6	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ35						Yes No
	AK35						Yes No
	AL35						Yes No
	AM35						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>35</u>	Rowe, H.E., <i>Signals and Noise in Communication Systems</i> , D. Van Nostrand Company, Inc., Princeton, New Jersey, including, for example, Chapter V, Pulse Modulation Systems (1965).
	AO	<u>35</u>	Rücker, F. and Dintelmann, F., "Effect of Antenna Size on OTS Signal Scintillations and Their Seasonal Dependence," <i>Electronics Letters</i> , IEE, Vol. 19, No. 24, pp. 1032-1034 (November 24, 1983).
	AP	<u>35</u>	Russell, R. and Hoare, L., "Millimeter Wave Phase Locked Oscillators," <i>Military Microwaves '78 Conference Proceedings</i> , Microwave Exhibitions and Publishers, pp. 238-242 (October 25-27, 1978).
	AQ	<u>35</u>	Sabel, L.P., "A DSP Implementation of a Robust Flexible Receiver/Demultiplexer for Broadcast Data Satellite Communications," <i>The Institution of Engineers Australia Communications Conference</i> , Institution of Engineers, Australia, pp. 218-223 (October 16-18, 1990).
	AR	<u>35</u>	Salous, S., "IF digital generation of FMCW waveforms for wideband channel characterization," <i>IEE Proceedings-I</i> , IEE, Vol. 139, No. 3, pp. 281-288 (June 1992).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA36	5,793,801	08/1998	Fertner	375	219	
	AB36	5,793,818	08/1998	Claydon et al.	375	326	
	AC36	5,802,463	09/1998	Zuckerman	455	208	
	AD36	5,809,060	09/1998	Cafarella et al.	375	206	
	AE36	5,818,582	10/1998	Fernandez et al.	356	318	
	AF36	5,825,254	10/1998	Lee	331	25	
	AG36	5,834,985	11/1998	Sundegård	332	100	
	AH36	5,864,754	01/1999	Hotto	455	280	
	AI36	5,881,375	03/1999	Bonds	455	118	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ36						Yes No
	AK36						Yes No
	AL36						Yes No
	AM36						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	36	"Sampling Loops Lock Sources to 23 Ghz," <i>Microwaves & RF</i> , Penton Publishing, p. 212 (September 1990).
	AO	36	Sasikumar, M. et al., "Active Compensation in the Switched-Capacitor Biquad," <i>Proceedings of the IEEE</i> , IEEE, Vol. 71, No. 8, pp. 1008-1009 (August 1983).
	AP	36	Saul, P.H., "A GaAs MESFET Sample and Hold Switch," <i>Fifth European Solid State Circuits Conference-ESSCIRC 79</i> , IEE, pp. 5-7 (1979).
	AQ	36	Shen, D.H. et al., "A 900-MHZ RF Front-End with Integrated Discrete-Time Filtering," <i>IEEE Journal of Solid-State Circuits</i> , IEEE Solid-State Circuits Council, Vol. 31, No. 12, pp. 1945-1954 (December 1996).
	AR	36	Shen, X.D. and Vilar, E., "Anomalous transhorizon propagation and meteorological processes of a multilink path," <i>Radio Science</i> , American Geophysical Union, Vol. 30, No. 5, pp. 1467-1479 (September-October 1995).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA37	5,892,380	04/1999	Quist	327	172	
	AB37	5,894,239	04/1999	Bonaccio et al.	327	176	
	AC37	5,896,562	04/1999	Heinonen	455	76	
	AD37	5,900,747	05/1999	Brauns	327	9	
	AE37	5,901,054	05/1999	Leu et al.	363	41	
	AF37	5,901,187	05/1999	Iinuma	375	347	
	AG37	5,901,344	05/1999	Opas	455	76	
	AH37	5,901,347	05/1999	Chambers et al.	455	234.1	
	AI37	5,901,348	05/1999	Bang et al.	455	254	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ37						Yes No
	AK37						Yes No
	AL37						Yes No
	AM37						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>37</u>	Shen, X. and Tawfik, A.N., "Dynamic Behaviour of Radio Channels Due to Trans-Horizon Propagation Mechanisms," <i>Electronics Letters</i> , IEE, Vol. 29, No. 17, pp. 1582-1583 (August 19, 1993).
	AO	<u>37</u>	Shen, X. et al., "Modeling Enhanced Spherical Diffraction and Troposcattering on a Transhorizon Path with aid of the parabolic Equation and Ray Tracing Methods," <i>IEE Colloquium on Common modeling techniques for electromagnetic wave and acoustic wave propagation</i> , IEE, pp. 4/1-4/7 (March 8, 1996).
	AP	<u>37</u>	Shen, X. and Vilar, E., "Path loss statistics and mechanisms of transhorizon propagation over a sea path," <i>Electronics Letters</i> , IEE, Vol. 32, No. 3, pp. 259-261 (February 1, 1996).
	AQ	<u>37</u>	Shen, D. et al., "A 900 MHZ Integrated Discrete-Time Filtering RF Front-End," <i>IEEE International Solid State Circuits Conference</i> , IEEE, Vol. 39, pp. 54-55 and 417 (February 1996).
	AR	<u>37</u>	Spillard, C. et al., "X-Band Tropospheric Transhorizon Propagation Under Differing Meteorological Conditions," <i>Sixth International Conference on Antennas and Propagation (ICAP 89) Part 2: Propagation</i> , IEE, pp. 451-455 (April 4-7, 1989).

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	AA38	5,901,349	05/1999	Guegnaud et al.	455	302	
	AB38	5,903,178	05/1999	Miyatsuji et al.	327	308	
	AC38	5,903,187	05/1999	Claverie et al.	329	342	
	AD38	5,903,196	05/1999	Salvi et al.	331	16	
	AE38	5,903,421	05/1999	Furutani et al.	361	58	
	AF38	5,903,553	05/1999	Sakamoto et al.	370	338	
	AG38	5,903,595	05/1999	Suzuki	375	207	
	AH38	5,903,609	05/1999	Kool et al.	375	261	
	AI38	5,903,827	05/1999	Kennan et al.	455	326	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ38						Yes No
	AK38						Yes No
	AL38						Yes No
	AM38						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>38</u>	Stafford, K.R. et al., "A Complete Monolithic Sample/Hold Amplifier," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. SC-9, No. 6, pp. 381-387 (December 1974).
	AO	<u>38</u>	Staruk, W. Jr. et al., "Pushing HF Data Rates," <i>Defense Electronics</i> , EW Communications, Vol. 17, No. 5, pp. 211, 213, 215, 217, 220 and 222 (May 1985).
	AP	<u>38</u>	Stephenson, A.G., "Digitizing multiple RF signals requires an optimum sampling rate," <i>Electronics</i> , McGraw-Hill, pp. 106-110 (March 27, 1972).
	AQ	<u>38</u>	Sugarman, R., "Sampling Oscilloscope for Statistically Varying Pulses," <i>The Review of Scientific Instruments</i> , American Institute of Physics, Vol. 28, No. 11, pp. 933-938 (November 1957).
	AR	<u>38</u>	Sylvain, M., "Experimental probing of multipath microwave channels," <i>Radio Science</i> , American Geophysical Union, Vol. 24, No. 2, pp. 160-178 (March-April 1989).

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	AA39	5,903,854	05/1999	Abe et al.	455	575	
	AB39	5,905,449	05/1999	Tsubouchi et al.	340	925.69	
	AC39	5,907,149	05/1999	Marckini	235	487	
	AD39	5,907,197	05/1999	Faulk	307	119	
	AE39	5,911,116	06/1999	Nosswitz	455	83	
	AF39	5,911,123	06/1999	Shaffer et al.	455	554	
	AG39	5,914,622	06/1999	Inoue	327	172	
	AH39	5,920,199	07/1999	Sauer	324	678	
	AI39	5,943,370	08/1999	Smith	375	334	

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	AJ39						Yes No
	AK39						Yes No
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	AM39						Yes No

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	AN	39	Takano, T., "NOVEL GaAs Pet Phase Detector Operable To Ka Band," <i>IEEE MT-S Digest</i> , IEEE, pp. 381-383 (1984).
	AO	39	Tan, M.A., "Biquadratic Transconductance Switched-Capacitor Filters," <i>IEEE Transactions on Circuits and Systems- I: Fundamental Theory and Applications</i> , IEEE Circuits and Systems Society, Vol. 40, No. 4, pp. 272-275 (April 1993).
	AP	39	Tanaka, K. et al., "Single Chip Multisystem AM Stereo Decoder IC," <i>IEEE Transactions on Consumer Electronics</i> , IEEE Consumer Electronics Society, Vol. CE-32, No. 3, pp. 482-496 (August 1986).
	AQ	39	Tawfik, A.N., "Amplitude, Duration and Predictability of Long Hop Trans-Horizon X-band Signals Over the Sea," <i>Electronics Letters</i> , IEE, Vol. 28, No. 6, pp. 571-572 (March 12, 1992).
	AR	39	Tawfik, A.N. and Vilar, E., "Correlation of Transhorizon Signal Level Strength with Localized Surface Meteorological Parameters," <i>Eighth International Conference on Antennas and Propagation</i> , Electronics Division of the IEE, pp. 335-339 (March 30- April 2, 1993).

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	AA40	4,017,798	04/1977	Gordy et al.	325	42	
	AB40	4,032,847	06/1977	Unkauf	325	323	
	AC40	4,253,067	02/1981	Caples et al.	329	110	
	AD40	4,393,395	07/1983	Hacke et al.	358	23	
	AE40	4,816,704	03/1989	Fiori, Jr.	307	519	
	AF40	4,841,265	06/1989	Watanabe et al.	333	194	
	AG40	4,943,974	07/1990	Motamedi	375	1	
	AH40	5,115,409	05/1992	Stepp	364	841	
	AI40	5,353,306	10/1994	Yamamoto	375	14	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ40						Yes No
	AK40						Yes No
	AL40						Yes No
	AM40						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>40</u>	Tawfik, A.N. and Vilar, E., "Dynamic Structure of a Transhorizon Signal at X-band Over a Sea Path," <i>Sixth International Conference on Antennas and Propagation (ICAP 89) Part 2: Propagation</i> , IEE, pp. 446-450 (April 4-7, 1989).
	AO	<u>40</u>	Tawfik, A.N. and Vilar, E., "Statistics of Duration and Intensity of Path Loss in a Microwave Transhorizon Sea-Path," <i>Electronics Letters</i> , IEE, Vol. 26, No. 7, pp. 474-476 (March 29, 1990).
	AP	<u>40</u>	Tawfik, A.N. and Vilar, E., "X-Band Transhorizon Measurements of CW Transmissions Over the Sea- Part 1: Path Loss, Duration of Events, and Their Modeling," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE Antennas and Propagation Society, Vol. 41, No. 11, pp. 1491-1500 (November 1993).
	AQ	<u>40</u>	Temes, G.C. and Tsvividis, T., "The Special Section on Switched-Capacitor Circuits," <i>Proceedings of the IEEE</i> , IEEE, Vol. 71, No. 8, pp. 915-916 (August 1983).
	AR	<u>40</u>	Thomas, G.B., <i>Calculus and Analytic Geometry</i> , Third Edition, Addison-Wesley Publishing, pp. 119-133 (1960).

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	AA41	5,515,014	05/1996	Troutman	332	178	
	AB41	5,563,550	10/1996	Toth	329	347	
	AC41	5,574,755	11/1996	Persico	375	295	
	AD41	5,604,592	02/1997	Kotidis et al.	356	357	
	AE41	5,638,396	06/1997	Klimek	372	92	
	AF41	5,675,392	10/1997	Nayebi et al.	348	584	
	AG41	5,694,096	12/1997	Ushiroku et al.	333	195	
	AH41	5,757,870	05/1998	Miya et al.	375	367	
	AI41	5,768,323	06/1998	Kroeger et al.	375	355	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ41						Yes No
	AK41						Yes No
	AL41						Yes No
	AM41						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>41</u>	Tomassetti, Q., "An Unusual Microwave Mixer," <i>16th European Microwave Conference</i> , Microwave Exhibitions and Publishers, pp. 754-759 (September 8-12, 1986).
	AO	<u>41</u>	Tortoli, P. et al., "Bidirectional Doppler Signal Analysis Based on a Single RF Sampling Channel," <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society, Vol. 41, No. 1, pp. 1-3 (January 1984).
	AP	<u>41</u>	Tsividis, Y. and Antognetti, P. (Ed.), <i>Design of MOS VLSI Circuits for Telecommunications</i> , Prentice-Hall, p. 304 (1985).
	AQ	<u>41</u>	Tsividis, Y., "Principles of Operation and Analysis of Switched-Capacitor Circuits," <i>Proceedings of the IEEE</i> , IEEE, Vol. 71, No. 8, pp. 926-940 (August 1983).
	AR	<u>41</u>	Tsurumi, H. and Maeda, T., "Design Study on a Direct Conversion Receiver Front-End for 280 MHz, 900 MHz, and 2.6 Ghz Band Radio Communication Systems," <i>41st IEEE Vehicular Technology Conference</i> , IEEE Vehicular Technology Society, pp. 457-462 (May 19-22, 1991).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA42	5,770,985	06/1998	Ushiroku et al.	333	193	
	AB42	5,778,022	07/1998	Walley	375	206	
	AC42	5,812,546	09/1998	Zhou et al.	370	342	
	AD42	5,818,869	10/1998	Miya et al.	375	206	
	AE42	5,844,449	12/1998	Abeno et al.	332	105	
	AF42	5,872,446	02/1999	Cranford, Jr. et al.	323	315	
	AG42	5,909,447	06/1999	Cox et al.	370	508	
	AH42	5,933,467	08/1999	Sehier et al.	375	350	
	AI42	5,952,895	09/1999	McCune, Jr. et al.	332	128	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ42						Yes No
	AK42						Yes No
	AL42						Yes No
	AM42						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>42</u>	Valdmanis, J.A. et al., "Picosecond and Subpicosecond Optoelectronics for Measurements of Future High Speed Electronic Devices," <i>IEDM Technical Digest</i> , IEEE, pp. 597-600 (December 5-7, 1983).
	AO	<u>42</u>	van de Kamp, M.M.J.L., "Asymmetric signal level distribution due to tropospheric scintillation," <i>Electronics Letters</i> , IEE, Vol. 34, No. 11, pp. 1145-1146 (May 28, 1998).
	AP	<u>42</u>	Vasseur, H. and Vanhoenacker, D., "Characterization of tropospheric turbulent layers from radiosonde data," <i>Electronics Letters</i> , IEE, Vol. 34, No. 4, pp. 318-319 (February 19, 1998).
	AQ	<u>42</u>	Verdone, R., "Outage Probability Analysis for Short-Range Communication Systems at 60 Ghz in ATT Urban Environments," <i>IEEE Transactions on Vehicular Technology</i> , IEEE Vehicular Technology Society, Vol. 46, No. 4, pp. 1027-1039 (November 1997).
	AR	<u>42</u>	Vierira-Ribeiro, S.A., <i>Single-IF DECT Receiver Architecture using a Quadrature Sub-Sampling Band-Pass Sigma-Delta Modulator</i> , Thesis for Degree of Master's of Engineering, Carleton University, UMI Dissertation Services, pp. 1-180 (April 1995).

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	AA43	5,960,033	09/1999	Shibano et al.	375	207	
	AB43	6,041,073	03/2000	Davidovici et al.	375	148	
	AC43	6,054,889	04/2000	Kobayashi	327	357	
	AD43	6,084,922	07/2000	Zhou et al.	375	316	
	AE43	6,125,271	09/2000	Rowland et al.	455	313	03/06/1998
	AF43	6,147,340	11/2000	Levy	250	214 R	09/29/1998
	AG43	6,147,763	11/2000	Steinlechner	356	484	12/27/1999
	AH43	6,150,890	11/2000	Damgaard et al.	331	14	09/30/1998
	AI43	5,126,682	06/1992	Weinberg et al.	329	304	

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	AJ43						Yes No
	AK43						Yes No
	AL43						Yes No
	AM43						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	43	Vilar, E. et al., "A Comprehensive/Selective MM-Wave Satellite Downlink Experiment on Fade Dynamics," <i>Tenth International Conference on Antennas and Propagation</i> , Electronics Division of the IEE, pp. 2.98-2.101 (April 14-17, 1997).
	AO	43	Vilar, E. et al., "A System to Measure LOS Atmospheric Transmittance at 19 Ghz," <i>AGARD Conference Proceedings No. 346: Characteristics of the Lower Atmosphere Influencing Radio Wave Propagation</i> , AGARD, pp. 8-1 - 8-16 (October 4-7, 1983).
	AP	43	Vilar, E. and Smith, H., "A Theoretical and Experimental Study of Angular Scintillations in Earth Space Paths," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE, Vol. AP-34, No. 1, pp. 2-10 (January 1986).
	AQ	43	Vilar, E. et al., "A Wide Band Transhorizon Experiment at 11.6 Ghz," <i>Eighth International Conference on Antennas and Propagation</i> , Electronics Division of the IEE, pp. 441-445 (March 30- April 2, 1993).
	AR	43	Vilar, E. and Matthews, P.A., "Amplitude Dependence of Frequency in Oscillators," <i>Electronics Letters</i> , IEE, Vol. 8, No. 20, pp. 509-511 (October 5, 1972).

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	AA44	5,841,811	11/1998	Song	375	235	
	AB44	4,051,475	09/1977	Campbell	343	180	
	AC44	5,953,642	09/1999	Feldtkeller <i>et al.</i>	455	195.1	
	AD44	4,653,117	03/1987	Heck	455	209	
	AE44	5,859,878	01/1999	Phillips <i>et al.</i>	375	316	
	AF44	5,894,496	04/1999	Jones	455	126	
	AG44	5,915,278	06/1999	Mallick	73	658	
	AH44	6,028,887	02/2000	Harrison <i>et al.</i>	375	206	
	AI44	6,081,691	06/2000	Renard <i>et al.</i>	455	12.1	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ44						Yes No
	AK44						Yes No
	AL44						Yes No
	AM44						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>44</u>	Vilar, E. <i>et al.</i> , "An experimental mm-wave receiver system for measuring phase noise due to atmospheric turbulence," <i>Proceedings of the 25th European Microwave Conference</i> , Nexus House, pp. 114-119 (1995).
	AO	<u>44</u>	Vilar, E. and Burgueño, A., "Analysis and Modeling of Time Intervals Between Rain Rate Exceedances in the Context of Fade Dynamics," <i>IEEE Transactions on Communications</i> , IEEE Communications Society, Vol. 39, No. 9, pp. 1306-1312 (September 1991).
	AP	<u>44</u>	Vilar, E. <i>et al.</i> , "Angle of Arrival Fluctuations in High and Low Elevation Earth Space Paths," <i>Fourth International Conference on Antennas and Propagation (ICAP 85)</i> , Electronics Division of the IEE, pp. 83-88 (April 16-19, 1985).
	AQ	<u>44</u>	Vilar, E., "Antennas and Propagation: A Telecommunications Systems Subject," <i>Electronics Division Colloquium on Teaching Antennas and Propagation to Undergraduates</i> , IEE, pp. 7/1-7/6 (March 8, 1988).
	AR	<u>44</u>	Vilar, E. <i>et al.</i> , "CERS". Millimetre-Wave Beacon Package and Related Payload Doppler Correction Strategies," <i>Electronics Division Colloquium on CERS- Communications Engineering Research Satellite</i> , IEE, pp. 10/1-10/10 (April 10, 1984).

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	AA45	6,121,819	09/2000	Traylor	327	359	04/06/1998
	AB45	6,144,236	11/2000	Vice et al.	327	113	02/01/1998
	AC45	6,144,846	11/2000	Durec	455	323	12/31/1997
	AD45	6,175,728 B1	01/2001	Mitama	455	323	03/03/1998
	AE45	5,705,949	01/1998	Alelyunas et al.	329	304	
	AF45	5,883,548	03/1999	Assard et al.	329	306	
	AG45	4,484,143	11/1984	French et al.	329	50	
	AH45	5,841,324	11/1998	Williams	331	17	
	AI45	4,855,894	08/1989	Asahi et al.	363	157	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ45						Yes No
	AK45						Yes No
	AL45						Yes No
	AM45						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>45</u>	Vilar, E. and Mousley, T.J., "Comment and Reply: Probability Density Function of Amplitude Scintillations," <i>Electronics Letters</i> , IEE, Vol. 21, No. 14, pp. 620-622 (July 4, 1985).
	AO	<u>45</u>	Vilar, E. et al., "Comparison of Rainfall Rate Duration Distributions for ILE-IFE and Barcelona," <i>Electronics Letters</i> , IEE, Vol. 28, No. 20, pp. 1922-1924 (September 24, 1992).
	AP	<u>45</u>	Vilar, E., "Depolarization and Field Transmittances in Indoor Communications," <i>Electronics Letters</i> , IEE, Vol. 27, No. 9, pp. 732-733 (April 25, 1991).
	AQ	<u>45</u>	Vilar, E. and Larsen, J.R., "Elevation Dependence of Amplitude Scintillations on Low Elevation Earth Space Paths," <i>Sixth International Conference on Antennas and Propagation (ICAP 89) Part 2: Propagation</i> , IEE, pp. 150-154 (April 4-7, 1989).
	AR	<u>45</u>	Vilar, E. et al., "Experimental System and Measurements of Transhorizon Signal Levels at 11 Ghz," <i>18th European Microwave Conference</i> , Microwave Exhibitions and Publishers Ltd., pp. 429-435 (September 12 - 15, 1988).

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1744.0630003APPLICATION NO.
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	AA46	5,319,799	06/1994	Morita	455	78	
	AB46	5,801,654	09/1998	Traylor	341	144	
	AC46	5,369,404	11/1994	Galton	341	143	
	AD46	3,716,730	02/1973	Cerny, Jr.	307	295	
	AE46	4,080,573	03/1978	Howell	325	439	
	AF46	4,334,324	06/1982	Hoover	455	333	
	AG46	4,369,522	01/1983	Cerny, Jr. et al.	455	333	
	AH46	5,465,418	11/1995	Zhou et al.	455	332	
	AI46	5,513,389	04/1996	Reeser et al.	455	311	

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	AJ46						Yes No
	AK46						Yes No
	AL46						Yes No
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	AN	<u>46</u>	Vilar, E. and Matthews, P.A., "Importance of Amplitude Scintillations in Millimetric Radio Links," <i>Proceedings of the 4th European Microwave Conference</i> , Microwave Exhibitions and Publishers, pp. 202-206 (September 10-13, 1974).
	AO	<u>46</u>	Vilar, E. and Haddon, J., "Measurement and Modeling of Scintillation Intensity to Estimate Turbulence Parameters in an Earth-Space Path," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE Antennas and Propagation Society, Vol. AP-32, No. 4, pp. 340-346 (April 1984).
	AP	<u>46</u>	Vilar, E. and Matthews, P.A., "Measurement of Phase Fluctuations on Millimetric Radiowave Propagation," <i>Electronics Letters</i> , IEE, Vol. 7, No. 18, pp. 566-568 (September 9, 1971).
	AQ	<u>46</u>	Vilar, E. and Wan, K.W., "Narrow and Wide Band Estimates of Field Strength for Indoor Communications in the Millimetre Band," <i>Electronics Division Colloquium on Radiocommunications in the Range 30-60 Ghz</i> , IEE, pp. 5/1-5/8 (January 17, 1991).
	AR	<u>46</u>	Vilar, E. and Faulkner, N.D., "Phase Noise and Frequency Stability Measurements. Numerical Techniques and Limitations," <i>Electronics Division Colloquium on Low Noise Oscillators and Synthesizer</i> , IEE, 5 pages (January 23, 1986).

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	AA47	5,959,850	09/1999	Lim	363	17	
	AB47	5,157,687	10/1992	Tymes	375	1	
	AC47	5,945,660	08/1999	Nakasuji et al.	235	462.46	
	AD47	6,091,939	07/2000	Banh	455	102	
	AE47	6,091,941	07/2000	Moriyama et al.	455	126	
	AF47	6,098,886	08/2000	Swift et al.	235	472.01	01/21/1998
	AG47	6,215,475 B1	04/2001	Meyerson et al.	345	173	06/07/1995
	AH47	6,049,706	04/2000	Cook et al.	455	313	
	AI47	6,061,551	05/2000	Sorrells et al.	455	118	

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	AJ47						Yes No
	AK47						Yes No
	AL47						Yes No
	AM47						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>47</u>	Vilar, E. and Senin, S., "Propagation phase noise identified using 40 Ghz satellite downlink," <i>Electronics Letters</i> , IEE, Vol. 33, No. 22, pp. 1901-1902 (October 23, 1997).
	AO	<u>47</u>	Vilar, E. et al., "Scattering and Extinction: Dependence Upon Raindrop Size Distribution in Temperate (Barcelona) and Tropical (Belem) Regions," <i>Tenth International Conference on Antennas and Propagation</i> , Electronics Division of the IEE, pp. 2.230-2.233 (April 14-17, 1997).
	AP	<u>47</u>	Vilar, E. and Haddon, J., "Scintillation Modeling and Measurement - A Tool for Remote-Sensing Slant Paths," <i>AGARD Conference Proceedings No. 332: Propagation Aspects of Frequency Sharing, Interference And System Diversity</i> , AGARD, pp. 27-1 - 27-13 (October 18-22, 1982).
	AQ	<u>47</u>	Vilar, E., "Some Limitations on Digital Transmission Through Turbulent Atmosphere," <i>International Conference on Satellite Communication Systems Technology</i> , Electronics Division of the IEE, pp. 169-187 (April 7-10, 1975).
	AR	<u>47</u>	Vilar, E. and Matthews, P.A., "Summary of Scintillation Observations in a 36 Ghz Link Across London," <i>International Conference on Antennas and Propagation Part 2: Propagation</i> , IEE, pp. 36-40 (November 28-30, 1978).

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	AA48	6,061,555	05/2000	Bultman <i>et al.</i>	455	313	
	AB48	6,091,940	07/2000	Sorrells <i>et al.</i>	455	118	
	AC48	6,266,518 B1	07/2001	Sorrells <i>et al.</i>	455	118	08/18/1999
	AD48	6,353,735 B1	03/2002	Sorrells <i>et al.</i>	455	118	08/23/1999
	AE48	6,370,371 B1	04/2002	Sorrells <i>et al.</i>	455	323	03/03/1999
	AF48	5,628,055	05/1997	Stein	455	89	
	AG48	5,678,220	10/1997	Fournier	455	302	
	AH48	5,926,065	07/1999	Wakai <i>et al.</i>	329	304	
	AI48	3,622,885	11/1971	Oberdorf <i>et al.</i>	325	40	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ48						Yes No
	AK48						Yes No
	AL48						Yes No
	AM48						Yes No

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	AN	<u>48</u>	Vilar, E. <i>et al.</i> , "Wideband Characterization of Scattering Channels," <i>Tenth International Conference on Antennas and Propagation</i> , Electronics Division of the IEE, pp. 2.353-2.358 (April 14-17, 1997).
	AO	<u>48</u>	Vollmer, A., "Complete GPS Receiver Fits on Two Chips," <i>Electronic Design</i> , Penton Publishing, pp. 50, 52, 54 and 56 (July 6, 1998).
	AP	<u>48</u>	<i>Voltage and Time Resolution in Digitizing Oscilloscopes: Application Note 348</i> , Hewlett Packard, pp. 1-11 (November 1986).
	AQ	<u>48</u>	Wan, K.W. <i>et al.</i> , "A Novel Approach to the Simultaneous Measurement of Phase and Amplitude Noises in Oscillator," <i>Proceedings of the 19th European Microwave Conference</i> , Microwave Exhibitions and Publishers Ltd., pp. 809-813 (September 4-7, 1989).
	AR	<u>48</u>	Wan, K.W. <i>et al.</i> , "Extended Variances and Autoregressive/Moving Average Algorithm for the Measurement and Synthesis of Oscillator Phase Noise," <i>Proceedings Of the 43rd Annual Symposium on Frequency Control</i> , IEEE, pp. 331-335 (1989).

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	AA49	4,483,017	11/1984	Hampel <i>et al.</i>	382	17	
	AB49	09/525,615		Sorrells <i>et al.</i>			03/14/2000
	AC49	09/632,855		Sorrells <i>et al.</i>			08/14/2000
	AD49	09/632,857		Sorrells <i>et al.</i>			08/14/2000
	AE49						
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	AG49						
	AH49						
	AI49						

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ49						Yes No
	AK49						Yes No
	AL49						Yes No
	AM49						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>49</u>	Wan, K.W. <i>et al.</i> , "Wideband Transhorizon Channel Sounder at 11 Ghz," <i>Electronics Division Colloquium on High Bit Rate UHF/SHF Channel Sounders - Technology and Measurement</i> , IEE, pp. 3/1-3/5 (December 3, 1993).
	AO	<u>49</u>	Wang, H., "A 1-V Multigigahertz RF Mixer Core in 0.5 - μ m CMOS," <i>IEEE Journal of Solid-State Circuits</i> , IEEE Solid-State Circuits Society, Vol. 33, No. 12, pp. 2265-2267 (December 1998).
	AP	<u>49</u>	Watson, A.W.D. <i>et al.</i> , "Digital Conversion and Signal Processing for High Performance Communications Receivers," <i>Digital Processing of Signals in Communications</i> , Institution of Electronic and Radio Engineers, pp. 367-373 (April 22nd -26th, 1985).
	AQ	<u>49</u>	Weast, R.C. <i>et al.</i> (Ed.), <i>Handbook of Mathematical Tables</i> , Second Edition, The Chemical Rubber Co., pp. 480-485 (1964).
	AR	<u>49</u>	Wiley, R.G., "Approximate FM Demodulation Using Zero Crossings," <i>IEEE Transactions on Communications</i> , IEEE, Vol. COM-29, No. 7, pp. 1061-1065 (July 1981).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA50						
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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ50						Yes No
	AK50						Yes No
	AL50						Yes No
	AM50						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>50</u>	Worthman, W., "Convergence... Again," <i>RF Design</i> , Primedia, p. 102 (March 1999).
	AO	<u>50</u>	Young, I.A. and Hodges, D.A., "MOS Switched-Capacitor Analog Sampled-Data Direct-Form Recursive Filters," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. SC-14, No. 6, pp. 1020-1033 (December 1979).
	AP	<u>50</u>	Translation of Specification and Claims of FR Patent No. 2245130, 3 pages.
	AQ	<u>50</u>	Fest, Jean-Pierre, "Le Convertisseur A/N Revolutionne Le Recepteur Radio," <i>Electronique</i> , JMJ (Publisher), No. 54, pp. 40-42 (December 1995).
	AR	<u>50</u>	Translation of DE Patent No. 35 41 031 A1, 22 pages.

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA51						
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ51						Yes No
	AK51						Yes No
	AL51						Yes No
	AM51						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>51</u>	Translation of EP Patent No. 0 732 803 A1, 9 pages.
	AO	<u>51</u>	Fest, Jean-Pierre, "The A/D Converter Revolutionizes the Radio Receiver," <i>Electronique</i> , JMJ (Publisher), No. 54, 3 pages (December 1995). (Translation of Doc. AQ50).
	AP	<u>51</u>	Translation of German Patent No. DE 197 35 798 C1, 8 pages.
	AQ	<u>51</u>	Miki, S. and Nagahama, R., <i>Modulation System II</i> , Common Edition 7, Kyoritsu Publishing Co., Ltd., pp. 146-154 (April 30, 1956).
	AR	<u>51</u>	Miki, S. and Nagahama, R., <i>Modulation System II</i> , Common Edition 7, Kyoritsu Publishing Co., Ltd., pp. 146-149 (April 30, 1956). (Partial Translation of Doc. AQ51).

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	AA52						
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ52						Yes No
	AK52						Yes No
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	AM52						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>52</u>	Rabiner, L.R. and Gold, B., <i>Theory And Application Of Digital Signal Processing</i> , Prentice-Hall, Inc., pp. xiii-xii and 40-46 (1975).
	AO	<u>52</u>	English-language Abstract of Japanese Patent Publication No. 08-032556, from http://www1.ipdl.jpo.go.jp , 2 Pages (February 2, 1996 - Date of publication of application).
	AP	<u>52</u>	English-language Abstract of Japanese Patent Publication No. 08-139524, from http://www1.ipdl.jpo.go.jp , 2 Pages (May 31, 1996 - Date of publication of application).
	AQ	<u>52</u>	English-language Abstract of Japanese Patent Publication No. 59-144249, from http://www1.ipdl.jpo.go.jp , 2 Pages (August 18, 1984 - Date of publication of application).
	AR	<u>52</u>	English-language Abstract of Japanese Patent Publication No. 63-054002, from http://www1.ipdl.jpo.go.jp , 2 Pages (March 8, 1988 - Date of publication of application).

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	AA53						
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	AJ53						Yes No
	AK53						Yes No
	AL53						Yes No
	AM53						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>53</u>	English-language Abstract of Japanese Patent Publication No. 06-237276, from http://www1.ipdl.jpo.go.jp , 2 Pages (August 23, 1994 - Date of publication of application).
	AO	<u>53</u>	English-language Abstract of Japanese Patent Publication No. 08-023359, from http://www1.ipdl.jpo.go.jp , 2 Pages (January 23, 1996 - Date of publication of application).
	AP	<u>53</u>	Translation of Japanese Patent Publication No. 47-2314, 7 pages.
	AQ	<u>53</u>	Partial Translation of Japanese Patent Publication No. 58-7903, 3 pages.
	AR	<u>53</u>	English-language Abstract of Japanese Patent Publication No. 58-133004, from http://www1.ipdl.jpo.go.jp , 2 Pages (August 8, 1993 - Date of publication of application).

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	AJ54						Yes No
	AK54						Yes No
	AL54						Yes No
	AM54						Yes No

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	AN	<u>54</u>	English-language Abstract of Japanese Patent Publication No. 60-058705, from http://www1.ipdl.jpo.go.jp , 2 Pages (April 4, 1985 - Date of publication of application).
	AO	<u>54</u>	English-language Abstract of Japanese Patent Publication No. 04-123614, from http://www1.ipdl.jpo.go.jp , 2 Pages (April 23, 1992 - Date of publication of application).
	AP	<u>54</u>	English-language Abstract of Japanese Patent Publication No. 04-127601, from http://www1.ipdl.jpo.go.jp , 2 Pages (April 28, 1992 - Date of publication of application).
	AQ	<u>54</u>	English-language Abstract of Japanese Patent Publication No. 05-175730, from http://www1.ipdl.jpo.go.jp , 2 Pages (July 13, 1993 - Date of publication of application).
	AR	<u>54</u>	English-language Abstract of Japanese Patent Publication No. 05-175734, from http://www1.ipdl.jpo.go.jp , 2 Pages (July 13, 1993 - Date of publication of application).

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	AL55						Yes No
	AM55						Yes No

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	AO	<u>55</u>	English-language Abstract of Japanese Patent Publication No. 07-307620, from http://www1.ipdl.jpo.go.jp , 2 Pages (November 21, 1995 - Date of publication of application).
	AP	<u>55</u>	Oppenheim, A.V. and Schafer, R.W., <i>Digital Signal Processing</i> , Prentice-Hall, pp. vii-x, 6-35, 45-78, 87-121 and 136-165 (1975).
	AQ	<u>55</u>	English-language Abstract of Japanese Patent Publication No. 55-066057, from http://www1.ipdl.jpo.go.jp , 1 Page (May 19, 1980 - Date of publication of application).
	AR	<u>55</u>	English-language Abstract of Japanese Patent Publication No. 63-065587, from http://www1.ipdl.jpo.go.jp , 1 Page (March 24, 1988 - Date of publication of application).

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	AJ56						Yes No
	AK56						Yes No
	AL56						Yes No
	AM56						Yes No

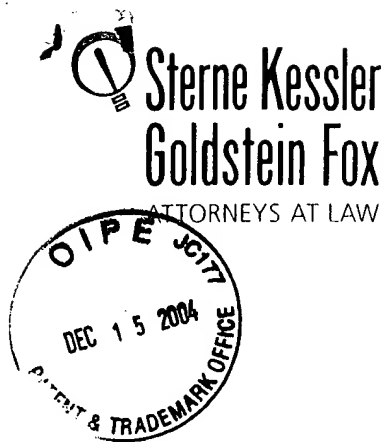
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>56</u>	English-language Abstract of Japanese Patent Publication No. 63-153691, from http://www1.ipdl.jpo.go.jp , 1 Page (June 27, 1988 - Date of publication of application).
	AO	<u>56</u>	
	AP	<u>56</u>	
	AQ	<u>56</u>	
	AR	<u>56</u>	

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



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June 9, 2003

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Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Group Art Unit 2634

Re: U.S. Utility Patent Application
Appl. No. 09/632,856; Filed: August 4, 2000
For: **Wireless Local Area Network (WLAN) Using Universal Frequency
Translation Technology Including Multi-Phase Embodiments and
Circuit Implementations**
Inventors: David F. SORRELLS *et al.*
Our Ref: 1744.0630003

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Second Preliminary Amendment Under 37 C.F.R. § 1.115 in the Revised Format of the Pre-OG Notice Dated January 31, 2003;
2. Supplemental Information Disclosure Statement;
3. A listing of the cited documents on Form PTO-1449 (4 pages);
4. Copies of the cited documents (AE49-AI49; AL19-AM19; AO56-AR56; AA50-AI50; AJ20-AM20; AN57-AQ57; AA51-AF51; AJ21-AM21; AJ22); and
5. One (1) return postcard.

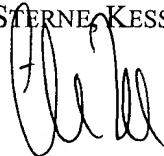
It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

Commissioner for Patents
June 9, 2003
Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Michael Q. Lee
Attorney for Applicants
Registration No. 35,239

Enclosures

::ODMA\MHODMA\SKGF_DC1;138439;1

 **Sterne Kessler
Goldstein Fox**
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* Practice Limited to
Federal Agencies



January 23, 2004

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FILE COPY

Art Unit 2634

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Re: U.S. Utility Patent Application
Appl. No. 09/632,856; Filed: August 4, 2000
For: **Wireless Local Area Network (WLAN) Using Universal Frequency
Translation Technology Including Multi-Phase Embodiments and
Circuit Implementation**
Inventors: Sorrells *et al.*
Our Ref: 1744.0630003

Sir:

Transmitted herewith for appropriate action are the following documents:

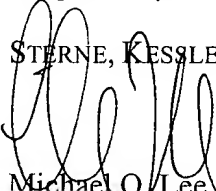
1. Second Supplemental Information Disclosure Statement;
2. A list of the cited documents on Forms PTO-1449 (6 pages);
3. A compact Disc labeled "Disc 3" in PDF format (which contains electronic copies of the cited documents);
4. Copies of cited documents: AA56, AB56, AC56, AD56, AE56, AN59; and
5. Return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

Commissioner for Patents
January 23, 2004
Page 2

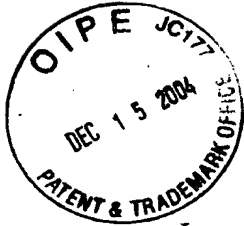
The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,


STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Michael Q. Lee
Attorney for Applicants
Registration No. 35,239

MQL/JTH/agj
SKGFDC1\222608.1



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

David F. SORRELLS *et al.*

Appl. No. 09/632,856

Filed: August 4, 2000

For: **Wireless Local Area Network
(WLAN) Using Universal Frequency
Translation Technology Including
Multi-Phase Embodiments and
Circuit Implementations**

Confirmation No.: 2377

Art Unit: 2634

Examiner: Chin, Stephen

Atty. Docket: 1744.0630003

Supplemental Information Disclosure Statement

Commissioner for Patents
Washington, D.C. 20231

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98. The reference numbering on the accompanying Form PTO-1449 for this Supplemental Information Disclosure Statement is a continuation of the numbering in Applicants' Information Disclosure Statement filed on July 25, 2002 in connection with the above-captioned application.

Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may

not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

Applicants provide the following comments regarding the documents:

Document AE49 is a co-owned patent which is directed to related subject matter.

Document AF49 was cited in an Office Action in co-pending U.S. Patent Application Serial No. 09/489,675, filed January 24, 2000, entitled "Bar Code Scanner Using Universal Frequency Translation Technology for Up-Conversion and Down-Conversion," directed to related subject matter. Also cited in said Office Action was U.S. Patent No. 6,091,940, which was cited in Applicants' Information Disclosure Statement filed on July 25, 2002 in connection with the above-captioned application.

Documents AG49-AI49 and AA50-AC50 were cited in an Office Action in co-pending U.S. Patent Application Serial No. 09/476,092, filed January 3, 2000, entitled "Analog Zero IF FM Decoder and Embodiments Thereof, Such as the Family Radio Service," directed to related subject matter.

Documents AL19, AM19 and AD50 were cited in an International Search Report in PCT Appl. No. PCT/US01/08969, filed March 22, 2001, entitled, "Integrated Frequency Translation and Selectivity with a Gain Control Functionality, and Applications Thereof," directed to related subject matter. Also cited in said Search Report were U.S. Patent Nos. 4,888,557 and 5,801,654 and PCT Publication Nos. WO 96/02977 and WO 96/39750, which were cited in Applicants' Information Disclosure Statement filed on July 25, 2002 in connection with the above-captioned application.

Document AJ20 was cited in an Office Action in co-pending Japanese Patent Application Serial No. 2000-577,764, filed June 21, 2000, entitled "Applications of

Universal Frequency Translation,". Also cited in said Office Action was Japanese Patent Publication No. 58-133004, which was cited in Applicants' Information Disclosure Statement filed on July 25, 2002 in connection with the above-captioned application.

Documents AK20, AL20, AJ21, AK21, AL21, AP56 and AQ56 were cited in an International Search Report in PCT Appl. No. PCT/US01/12086, filed April 13, 2001, entitled, "Frequency Converter," directed to related subject matter. Also cited in said International Search Report was U.S. Patent No. 5,844,449, which was cited in Applicants' Information Disclosure Statement filed on July 25, 2002 in connection with the above-captioned application.

Document AE50 was cited in an Office Action in co-pending U.S. Patent Application Serial No. 09/376,509, filed August 18, 1999, entitled "Method and System for Ensuring Reception of a Communications Signal," directed to related subject matter.

Documents AM21 and AJ22 were cited in an Official Notice of Rejection in co-pending Japanese Patent Application No. 2000-577,765, filed June 21, 2000, entitled "Method and System for Ensuring Reception of a Communications Signal," directed to related subject matter. Also cited in said Rejection were Japanese Patent Publication Nos. 56-114451, 8-32556 and 8-139524, which were cited in Applicants' Information Disclosure Statement filed on July 25, 2002 in connection with the above-captioned application.

Documents AF50-AH50, AA51, AC51 and AF51 were cited in and Office Action in co-pending U.S. Patent Application Serial No. 09/476,330, filed January 3, 2000, entitled "Multi-Mode, Multi-Band Communication System," directed to related subject matter.

Document AI50 was cited in an Office Action in co-pending U.S. Patent Application Serial No. 09/567,963, filed May 10, 2000, entitled "Frequency Synthesizer Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AB51, AD51 and AE51 were cited in an Office Action in co-pending U.S. Patent Appl. No. 09/526,041, filed March 14, 2000, entitled, "DC Offset, Re-radiation, and I/Q Solutions Using Universal Frequency Translation Technology," directed to related subject matter.

The other documents in the PTO-1449 do not fall within the above categories.

It is noted that some of these documents could be classified in more than one of the above categories.

This statement should not be construed as a representation that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- ☒ 1. This Information Disclosure Statement is being filed before the mailing of a first Office Action. No statement or fee is required.
- ☐ 2. This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection or Notice of Allowance.
 - ☐ a. I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

- ☐ b. I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ c. Attached is our Check No. 32067 in the amount of \$ _____ in payment of the fee under 37 C.F.R. § 1.17(p).
- ☐ 3. This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. A separate Petition to the Group Director, requesting consideration of this Information Disclosure Statement, is concurrently submitted herewith, along with our Check No. _____ in the amount of \$ _____ in payment of the fee under 37 C.F.R. § 1.17(i).
 - ☐ a. I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
 - ☐ b. I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ 4. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found

by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.

- 5. Concise explanations of the relevance of non-English language documents AJ20-AL20, AK21, AM21 and AJ22 appear below:

Document AJ20 (JP 60-130203) appears to describe a frequency converter. A copy of the English language translation of document AJ20 is enclosed as document AO56 on the attached PTO-1449.

Document AK20 (DE 196 27 640 A1) appears to describe a mixer. Document AK20 is a counterpart German application of U.S. Patent No. 5,680,078, which was cited in Applicants' Information Disclosure Statement filed on July 25, 2002 in connection with the above-captioned application.

Document AL20 (EP 0 087 336 A1) appears to describe a transistorized mixer for microwave transmitters. The granted version of document AL20 is cited as document AM20 (EP 0 087 336 B1) and contains an English-language version of the claims.

Document AK21 (FR 2 669 787 A1) appears to describe a symmetrical super high frequency mixer. A copy of the English-language abstract of document AK21 is enclosed as document AR56 on the attached PTO-1449.

Document AM21 (JP 61-30821) appears to describe a squelch device. A copy of the English-language abstract of document AM21 is enclosed as document AP57 on the attached PTO-1449.

Document AJ22 (JP 5-327356) appears to describe a frequency converter. A copy of the English-language abstract of document AJ22 is enclosed as document AQ57 on the attached PTO-1449.

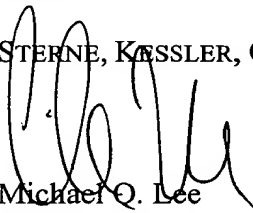
- 6. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No. _____, filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

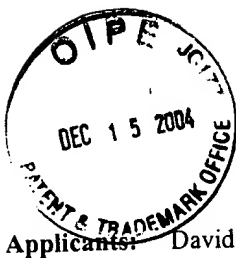


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Date: June 9, 2003

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(202) 371-2600

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Applicants: David F. SORRELLS *et al.*

Due Date: None

Art Unit: 2634

Examiner: Chin, Stephen

Docket: 1744.0630003

Atty: MQL/JEW

Application No.: 09/632,856

Filed: August 4, 2000

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit Implementations

When receipt stamp is placed hereon, the USPTO acknowledges receipt of the following documents:

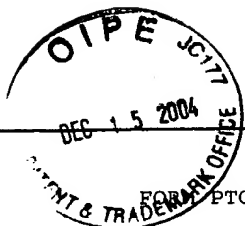
1. SKGF Cover Letter;
2. Second Preliminary Amendment Under 37 C.F.R. § 1.115 in the Revised Format of the Pre-OG Notice Dated January 31, 2003;
3. Supplemental Information Disclosure Statement;
4. A listing of the cited documents on Form PTO-1449 (4 pages);
5. Copies of the cited documents (AE49-AI49; AL19-AM19; AO56-AR56; AA50-AI50; AJ20-AM20; AN57-AQ57; AA51-AF51; AJ21-AM21; AJ22); and
6. One (1) return postcard.

::ODMAMHODMA\SKGF_DC1;138454;1

Please Date Stamp And Return To Our Courier



Sterne, Kessler, Goldstein & Fox P.L.L.C.
1100 New York Avenue, NW
Washington, DC 20005-3934



SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT	ATTY. DOCKET NO. 1744.0630003	APPLICATION NO. 09/632,856
	APPLICANT David F. SORRELLS et al.	
	FILING DATE August 4, 2000	GROUP 2634

U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AE49	6,421,534 B1	07/2002	Cook et al.			08/18/1999
	AF49	6,330,244 B1	12/2001	Swartz et al.			01/16/1998
	AG49	4,384,357	05/1983	deBuda et al.			
	AH49	4,470,145	09/1984	Williams			
	AI49	5,600,680	02/1997	Mishima et al.			

FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL19	EP 0 254 844 A2	02/1988	EP	H03D	7/00	N/A
	AM19	EP 0 632 577 A1	01/1995	EP	H03D	7/16	N/A

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
	AO	<u>56</u>	Translation of Japanese Patent Publication No. 60-130203, 3 pages (July 11, 1985- Date of publication of application).
	AP	<u>56</u>	Razavi, B., "A 900-MHz/1.8-GHz CMOS Transmitter for Dual-Band Applications," <i>Symposium on VLSI Circuits Digest of Technical Papers</i> , IEEE, pp. 128-131 (1998).
	AQ	<u>56</u>	Ritter, G.M., "SDA, A New Solution for Transceivers," <i>16th European Microwave Conference</i> , Microwave Exhibitions and Publishers, pp. 729-733 (September 8, 1986).
	AR	<u>56</u>	DIALOG File 351 (Derwent WPI) English Language Patent Abstract for FR 2 669 787, 1 page (May 29, 1992- Date of publication of application).

EXAMINER	DATE CONSIDERED
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.	

FORM PTO-1449 <u>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT</u>	ATTY. DOCKET NO. 1744.0630003	APPLICATION NO. 09/632,856
	APPLICANT David F. SORRELLS <i>et al.</i>	
	FILING DATE August 4, 2000	GROUP 2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA50	5,606,731	02/1997	Pace <i>et al.</i>			
	AB50	5,870,670	02/1999	Ripley <i>et al.</i>			
	AC50	6,314,279 B1	11/2001	Mohindra			06/29/1998
	AD50	5,633,815	05/1997	Young			
	AE50	3,246,084	04/1966	Kryter			
	AF50	3,702,440	11/1972	Moore			
	AG50	3,767,984	10/1973	Shinoda <i>et al.</i>			
	AH50	3,852,530	12/1974	Shen			
	AI50	4,220,977	09/1980	Yamanaka			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ20	JP 60-130203	07/1985	JP	H03D	7/00	Yes (Doc. AO56)
	AK20	DE 196 27 640 A1	01/1997	DE	H03D	7/12	No
	AL20	EP 0 087 336 A1	08/1983	EP	H03D	7/12	No
	AM20	EP 0 087 336 B1	07/1986	EP	H03D	7/12	No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>57</u>	Akos, D.M. <i>et al.</i> , "Direct Bandpass Sampling of Multiple Distinct RF Signals," <i>IEEE Transactions on Communications</i> , IEEE, Vol. 47, No. 7, pp. 983-988 (July 1999).
	AO	<u>57</u>	Patel, M. <i>et al.</i> , "Bandpass Sampling for Software Radio Receivers, and the Effect of Oversampling on Aperture Jitter," <i>VTC 2002</i> , IEEE, pp. 1901-1905 (2002).
	AP	<u>57</u>	English-language Abstract of Japanese Patent Publication No. 61-030821, 1 Page (February 13, 1986- Date of publication of application).
	AQ	<u>57</u>	English-language Abstract of Japanese Patent Publication No. 05-327356, 1 Page (December 10, 1993 - Date of publication of application).

EXAMINER

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	APPLICANT David F. SORRELLS <i>et al.</i>	
	FILING DATE August 4, 2000	GROUP 2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA51	5,016,242	05/1991	Tang			
	AB51	5,937,013	08/1999	Lam <i>et al.</i>			01/03/1997
	AC51	6,014,551	01/2000	Pesola <i>et al.</i>			07/16/1997
	AD51	6,073,001	06/2000	Sokoler			05/08/1998
	AE51	6,085,073	07/2000	Palermo <i>et al.</i>			03/02/1998
	AF51	6,400,963 B1	06/2002	Glöckler <i>et al.</i>			05/21/1999

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ21	EP 0 789 449 A2	08/1997	EP	H03D	7/12	N/A
	AK21	FR 2 669 787 A1	05/1992	FR	H03D	7/14	No
	AL21	GB 2 324 919 A	11/1998	GB	H03D	7/18	N/A
	AM21	JP 61-30821	02/1986	JP	H04B	1/10	No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

EXAMINER	DATE CONSIDERED
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 <u>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT</u>	ATTY. DOCKET NO. 1744.0630003	APPLICATION NO. 09/632,856
	APPLICANT David F. SORRELLS et al.	
	FILING DATE August 4, 2000	GROUP 2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ22	JP 5-327356	12/1993	JP	H03D	7/00	No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

EXAMINER	DATE CONSIDERED
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Sorrells *et al.*

Appl. No. 09/632,856

Filed: August 4, 2000

For: **Wireless Local Area Network
(WLAN) Using Universal
Frequency Translation
Technology Including Multi-
Phase Embodiments and
Circuit Implementation**

Confirmation No. 2377

Art Unit: 2634

Examiner: Kim, Kevin

Atty. Docket: 1744.0630003

Second Supplemental Information Disclosure Statement

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98. The numbering on this Second Supplemental Information Disclosure Statement is a continuation of the numbering in Applicants' Supplemental Information Disclosure Statement filed on June 9, 2003 in connection with the above-captioned application.

In addition to providing hard copies of the documents as required by applicable rules (see box 7 below), Applicants herewith provide a Compact Disc labeled "Disc 3" having stored thereon searchable electronic copies (in PDF format) of many of the documents listed on the PTO-1449. More specifically, the CD contains electronic copies of documents AG51-AI51, AA52-AI52, AA53-AI53, AA54-AG54, AK22, AL22, AM22, AJ23, AK23, AR57 and AN58-AR58. In addition, the CD contains electronic copies of

documents AC46-AI46, AA47-AI47, AA48-AI48, AA49, AE49-AI49, AA50-AI50, AA51-AF51, AM13, AJ14-AM14, AJ15-AM15, AJ16-AM16, AJ17-AM17, AJ18-AM18, AJ19-AM19, AJ20-AM20, AJ21-AM21, AJ22, AQ51, AR51, AN52-AR52, AN53-AR53, AN54-AR54, AN55-AR55, AN56-AR56 and AN57-AQ57, all of which were cited in previous Information Disclosure Statements. Documents AH54, AI54, AA55-AI55, AA56-AE56 and AN59 have not yet been scanned. The file names on the CD correspond to the identifiers on the PTO-1449s. It is noted that the CD is being provided in addition to hard copies of the documents (as required by applicable rules) for the convenience of the Examiner.

Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

Applicants provide the following comments regarding the documents:

Document AH51 was cited in an Office Action in related U.S. Patent Application Serial No. 09/476,092, filed January 3, 2000, entitled "Analog Zero IF FM Decoder and Embodiments Thereof, Such as the Family Radio Service," directed to related subject matter. Also cited in the Office Action were U.S. Patent Nos. 5,600,680 and 5,606,731,

which have already been cited in the present application in the Supplemental Information Disclosure Statement, filed June 9, 2003.

Documents AI51, AA52, AF52, AA55 and AI55 are co-owned patents which are directed to related subject matter.

Documents AB52, AE56, AN58-AP58 and AN59 were cited in Office Actions in related U.S. Patent Appl. No. 09/567,977, filed May 10, 2000, entitled, "Optical Down-converter Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AE52 and AJ23 were cited in an Invitation to Pay Additional Fees in related PCT Appl. No. PCT/US01/43077, filed November 14, 2001, entitled "Method and Apparatus for a Parallel Correlator and Applications Thereof," directed to related subject matter.

Documents AG52-AI52 and AA53 were cited in an Office Action in related U.S. Patent Application No. 09/986,764, filed November 9, 2001, entitled "Method and Apparatus for Reducing DC Offsets in a Communication System," directed to related subject matter.

Documents AB53-AE53 were cited in an International Search Report in related PCT Application No. PCT/US02/35861, filed November 8, 2002, entitled "Method and Apparatus for Reducing DC Offsets in a Communication System," directed to related subject matter.

Documents AF53-AI53 and AA54-AC54 were cited in an Office Action in related U.S. Patent Application No. 09/476,093, filed January 3, 2000, entitled "Family Radio

System with Multi-Mode and Multi-Band Functionality," directed to related subject matter.

Documents AD54-AG54 were cited in an International Search Report in related PCT Application No. PCT/US03/16403, filed May 27, 2003, entitled "Method and Apparatus for DC Offset Removal in a Radio Frequency Communication Channel," directed to related subject matter.

Documents AH54 and AI54 were cited in an Office Action in related U.S. Patent Application No. 09/550,642, filed April 14, 2000, entitled "Method and System for Down-converting an Electromagnetic Signal, and Transforms for Same," directed to related subject matter.

Documents AB55-AF55 were cited in an Office Action in related U.S. Patent Application No. 09/548,923, filed April 13, 2000, entitled "Method and System for Frequency Conversion with Modulation Embodiments," directed to related subject matter. Also cited in the Office Action were U.S. Patent Nos. 6,091,940 and 6,353,735, which have already been cited in the present application in the Information Disclosure Statement, filed July 25, 2002.

Documents AG55 and AH55 were cited in an Office Action in related U.S. Patent Application No. 09/543,867, filed April 5, 2000, entitled "Automated Meter Reader Applications of Universal Frequency Translation," directed to related subject matter.

Documents AA56 and AB56 were cited in an Office Action in related U.S. Patent Application No. 10/317,181, filed December 12, 2002, entitled "Differential Frequency Down-Conversion Using Techniques of Universal Frequency Translation Technology," directed to related subject matter.

Documents AC56 and AD56 were cited in an Office Action in related U.S. Patent Application No. 10/317,165, filed December 12, 2002, entitled "Method and Apparatus for Reducing DC Offsets in Communication Systems Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AK22-AM22, AA52, AB52 and AQ58 were cited in an International Search Report in related PCT Appl. No. PCT/US01/15555, filed May 16, 2001, entitled, "Apparatus, System, and Method for Down-Converting and Up-Converting Electromagnetic Signals," directed to related subject matter. Also cited the International Search Report were U.S. Patent Nos. 4,888,557, 5,454,007, 5,640,698 and 5,705,949, and PCT Publication No. WO 96/02977, which have already been cited in the present application in the Information Disclosure Statement, filed July 25, 2002.

Document AK23 was cited in an Office Action in related Japanese Patent Application No. 2000-577,764, filed June 21, 2000, entitled "Applications of Frequency Translation," directed to related subject matter.

The other documents in the PTO-1449 do not fall within the above categories.

This statement should not be construed as a representation that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- ☐ 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

- ☒ 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits. No statement or fee is required.
- ☐ 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.
- ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ c. Attached is our PTO-2038 Credit Card Payment Form in the amount of _____ in payment of the fee under 37 C.F.R. § 1.17(p).
- ☐ 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our Check No. _____ in the amount of \$ _____ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:
- ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement

was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- 6. A concise explanation of the relevance of non-English language document AK23 appears below:

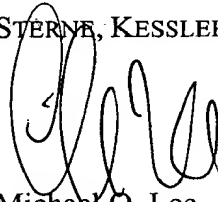
Document AK23 (JP 9-36664) appears to describe a frequency conversion circuit. A copy of the English-language abstract of document AK23 is enclosed as document AR58.
- 7. Copies of documents AA56-AE56 and AN59 are enclosed. Copies of the remaining documents were submitted to the Patent Office in Information Disclosure Statements that comply with 37 C.F.R. § 1.98(a)-(c) in Application No. 09/525,615, filed March 14, 2000, and Appl. No. 09/526,041, filed March 14, 2000, which are both relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Michael Q. Lee
Attorney for Applicants
Registration No. 35,239

Date: _____

1/23/04

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*Practice Limited to Federal Agencies

August 19, 2004

WRITER'S DIRECT NUMBER:
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JHLEVY@SKGF.COM

FILE COPY

Art Unit 2634

Re: U.S. Utility Patent Application
Appl. No. 09/632,856; Filed: August 4, 2000
For: **Wireless Local Area Network (WLAN) Using Universal Frequency
Translation Technology Including Multi-Phase Embodiments and
Circuit Implementation**

Inventors: Sorrells *et al.*
Our Ref: 1744.0630003

Sir:

Transmitted herewith for appropriate action are the following documents:

1. SKGF Cover Letter;
2. Fee Transmittal (Form PTO/SB/17);
3. Third Supplemental Information Disclosure Statement;
4. Form PTO-1449 (6 pages);
5. Return postcard; and
6. PTO-2038 Credit Card Payment Form for \$180.00 to cover:
\$180.00 for IDS Late Filing Surcharge.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

Commissioner for Patents
August 19, 2004
Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Jeffrey T. Helvey
Attorney for Applicants
Registration No. 44,757

JTH/agj
301413_1.DOC



Applicants: Sorrells et al

Art Unit: 2634

Application No.: 09/632,856

Examiner: Kim, Kevin

Filed: August 4, 2000

Docket: 1744.0630003

Atty: MQL/JTH

For: Wireless Local Area Network (WLAN) Using Universal
Frequency Translation Technology Including Multi-
Phase Embodiments and Circuit Implementation

When receipt stamp is placed hereon, the USPTO acknowledges receipt of the following documents:

1. SKGF Cover Letter;
2. Second Supplemental Information Disclosure Statement;
3. A list of the cited documents on Forms PTO-1449 (6 pages);
4. A compact Disc labeled "Disc 3" in PDF format (which contains electronic copies of the cited documents);
5. Copies of cited documents: AA56, AB56, AC56, AD56, AE56, AN59; and
6. Return postcard.



Please Date Stamp and Return to Our Courier

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
1100 New York Avenue, NW
Washington, DC 20005-3934

DEC 15 2004

FORM PTA-1449

SECOND SUPPLEMENTAL
INFORMATIONAL DISCLOSURE STATEMENTATTY. DOCKET NO.
1744.0630003APPLICATION NO.
09/632,856APPLICANTS
Sorrells et al.FILING DATE
August 4, 2000GROUP
2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG51	6,230,000 B1	05/2001	Tayloe			
	AH51	5,483,695	01/1996	Pardoen			
	AI51	6,542,722 B1	04/2003	Sorrells et al.			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ						
	AK22	EP 0 643 477 A2 & A3	03/1995	EP			N/A
	AL22	EP 0 877 476 A1	11/1998	EP			N/A
	AM22	EP 0 977 351 A1	02/2000	EP			N/A

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN		
	AO		
	AP		
	AQ		
	AR	57	Tayloe, D., "A Low-noise, High-performance Zero IF Quadrature Detector/Preamplifier," <i>RF Design</i> , Primedia Business Magazines & Media, Inc., pp. 58, 60, 62 and 69 (March 2003).

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449

**SECOND SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT**

 ATTY. DOCKET NO.
1744.0630003

 APPLICATION NO.
09/632,856

 APPLICANTS
Sorrells et al.

 FILING DATE
August 4, 2000

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2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA52	6,560,301 B1	05/2003	Cook et al.			
	AB52	6,098,046	08/2000	Cooper et al.			
	AC52	5,564,097	10/1996	Swanke			
	AD52	5,898,912	04/1999	Heck et al.			
	AE52	4,660,164	04/1987	Leibowitz			
	AF52	6,580,902 B1	06/2003	Sorrells et al.			
	AG52	4,857,928	08/1989	Gailus et al.			
	AH52	5,389,839	02/1995	Heck			
	AI52	5,471,665	11/1995	Pace et al.			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ23	WO 00/31659 A1	06/2000	PCT			N/A
	AK23	JP 9-36664	02/1997	JP			No
	AL						
	AM						

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>58</u>	Dines, J.A.B., "Smart Pixel Optoelectronic Receiver Based on a Charge Sensitive Amplifier Design," <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , IEEE, Vol. 2, No. 1, pp. 117-120 (April 1996).
	AO	<u>58</u>	Simoni, A. et al., "A Digital Camera for Machine Vision," <i>20th International Conference on Industrial Electronics, Control and Instrumentation</i> , IEEE, pp. 879-883 (September 1994).
	AP	<u>58</u>	Stewart, R.W. and Pfann, E., "Oversampling and sigma-delta strategies for data conversion," <i>Electronics & Communication Engineering Journal</i> , IEEE, pp. 37-47 (February 1998).
	AQ	<u>58</u>	Rudell, J.C. et al., "A 1.9-GHz Wide-Band IF Double Conversion CMOS Receiver for Cordless Telephone Applications," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. 32, No. 12, pp. 2071-2088 (December 1997).
	AR	<u>58</u>	English-language Abstract of Japanese Patent Publication No. 09-036664, from http://www1.ipdl.jpo.go.jp , 2 Pages (February 7, 1997 - Date of publication of application).

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2634**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA53	6,327,313 B1	12/2001	Traylor et al.			
	AB53	5,751,154	05/1998	Tsugal			
	AC53	5,793,817	08/1998	Wilson			
	AD53	6,225,848 B1	05/2001	Tilley et al.			
	AE53	6,313,685 B1	11/2001	Rabii			
	AF53	3,614,627	10/1971	Runyan et al.			
	AG53	3,940,697	02/1976	Morgan			
	AH53	4,016,366	04/1977	Kurata			
	AI53	4,045,740	08/1977	Baker			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ						
	AK						
	AL						
	AM						

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	59	Simoni, A. et al., "A Single-Chip Optical Sensor with Analog Memory for Motion Detection," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. 30, No. 7, pp. 800-806 (July 1995).
	AO		
	AP		
	AQ		
	AR		

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	AA54	4,115,737	09/1978	Hongu <i>et al.</i>			
	AB54	5,710,992	01/1998	Sawada <i>et al.</i>			
	AC54	5,790,587	08/1998	Smith <i>et al.</i>			
	AD54	4,740,675	04/1988	Brosnan <i>et al.</i>			
	AE54	5,483,600	01/1996	Werrbach			
	AF54	6,011,435	01/2000	Takeyabu <i>et al.</i>			
	AG54	6,321,073 B1	11/2001	Luz <i>et al.</i>			
	AH54	6,026,286	02/2000	Long			
	AI54	6,178,319 B1	01/2001	Kashima			

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2634**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA55	6,634,555 B1	10/2003	Sorrells <i>et al.</i>			
	AB55	3,736,513	05/1973	Wilson			
	AC55	4,488,119	12/1984	Marshall			
	AD55	4,633,510	12/1986	Suzuki <i>et al.</i>			
	AE55	5,369,789	11/1994	Kosugi <i>et al.</i>			
	AF55	5,416,449	05/1995	Joshi			
	AG55	5,438,329	08/1995	Gastouniotis <i>et al.</i>			
	AH55	6,611,569 B1	08/2003	Schier <i>et al.</i>			
	AI55	6,647,250 B1	11/2003	Bultman <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

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	AJ						
	AK						
	AL						
	AM						

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2634**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA56	5,682,099	10/1997	Thompson <i>et al.</i>			
	AB56	6,094,084	07/2000	Abou-Allam <i>et al.</i>			
	AC56	6,067,329	05/2000	Kato <i>et al.</i>			
	AD56	6,516,185 B1	02/2003	MacNally			
	AE56	6,608,647 B1	08/2003	King			
	AF						
	AG						
	AH						
	AI						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ						
	AK						
	AL						
	AM						

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN		
	AO		
	AP		
	AQ		
	AR		

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

SORRELLS *et al.*

Appl. No.: 09/632,856

Filed: August 4, 2000

**For: Wireless Local Area Network
(WLAN) Using Universal
Frequency Translation Technology
Including Multi-Phase
Embodiments and Circuit
Implementation**

Confirmation No.: 2377

Art Unit: 2634

Examiner: Kim, Kevin

Atty. Docket: 1744.0630003

Third Supplemental Information Disclosure Statement

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98. The numbering on this Third Supplemental Information Disclosure Statement is a continuation of the numbering in Applicants' Second Supplemental Information Disclosure Statement filed on January 23, 2004 in connection with the above-captioned application.

Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

Applicants provide the following comments regarding the documents:

Documents AL23, AI56, AA57, AB57, AO59, and AF61 were cited in an Office Action in related U.S. Patent Application No. 09/669,634, filed September 26, 2000, entitled "High Frequency Translator and Method of High Frequency Translation," directed to related subject matter. Also cited in said Office Action were U.S. Patent Nos. 6,049,706; 6,421,534; and 6,560,301, which have already been cited in the present application.

Documents AF56, AG56, AAC7, and AD57 are co-owned patents which are directed to related subject matter.

Documents AF56, AG56, AC57, AD57, and AI59 were cited in a Notice of Allowance in related U.S. Patent Application No. 09/838,387, filed April 20, 2001, entitled "Method and System for Down-Converting and Up-Converting an Electromagnetic Signal, and Transforms for Same," directed to related subject matter. Also cited in said Notice of Allowance were U.S. Patent Nos. 5,937,013; 6,061,551; and 6,647,250, which have already been cited in the present application.

Document AH56 was cited in an Office Action in related U.S. Patent Application No. 09/567,977, filed May 10, 2000, entitled "Optical Down-converter Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AE57-AH57 were cited in an Office Action in related U.S. Patent Application No. 09/567,978, filed May 10, 2000, entitled "Carrier and Clock Recovery Using Universal Frequency Translation," directed to related subject matter. Also cited in said Office Action was U.S. Patent No. 5,937,013, which has already been cited in the present application.

Documents AI57 and AA58 were cited in a Notice of Allowance in related U.S. Patent Application No. 10/330,219, filed December 30, 2002, entitled "Methods and Systems for Down-Converting Electromagnetic Signals, and Applications Thereof," directed to related subject matter.

Documents AB58-AI58 and AA59-AD59 were cited in an Office Action in related U.S. Patent Application No. 09/566,188, filed May 5, 2000, entitled "Integrated Frequency Translation and Selectivity with Gain Control Functionality, and Applications Thereof," directed to related subject matter.

Documents AE59-AG59 were cited in an Office Action in related U.S. Patent Application No. 09/569,044, filed May 10, 2000, entitled "Universal Platform Module and Methods and Apparatuses Relating Thereto Enabled by Universal Frequency Translation Technology," directed to related subject matter. Also cited in said Office Action were U.S. Patent Nos. 2,057,613; 2,241,078; 2,283,575; 2,358,152; 2,410,350; 2,451,430; 2,472,798; 4,653,117; and 5,241,561, which have already been cited in the present application.

Document AH59 was cited in an Office Action in related U.S. Patent Application No. 10/289,377, filed November 7, 2002, entitled "Method and Apparatus for Reducing DC Offsets in a Communication System," directed to related subject matter. Also cited

in said Office Action were U.S. Pat. Nos. 5,471,665; 5,793,817; and 5,898,912, which have already been cited in the present application.

Documents AA60 and AB60 were cited in an Office Action in related U.S. Patent Application No. 09/525,185, filed March 14, 2000, entitled "Spread Spectrum Applications of Universal Frequency Translation Technology," directed to related subject matter. Also cited in said Office Action were U.S. Patent Nos. 5,339,459; 5,369,789; and 5,937,013, which have already been cited in the present application.

Documents AC60-AF60 were cited in an Office Action in related U.S. Patent Application No. 09/569,045, filed May 10, 2000, entitled "Methods and Apparatuses Relating to a Universal Platform Module and Enabled by Universal Frequency Translation Technology," directed to related subject matter. Also cited in said Office Action were U.S. Patent Nos. 5,339,459 and 5,557,641, which have already been cited in the present application.

Documents AG60-AI60 were cited in an Office Action in related U.S. Patent Application No. 09/590,955, filed June 9, 2000, entitled "Phase-Shifting Applications of Universal Frequency Translation," directed to related subject matter. Also cited in said Office Action was U.S. Patent No. 5,339,459, which has already been cited in the present application in a previous Information Disclosure Statement.

Documents AA61-AC61 were cited in an Office Action in related U.S. Patent Application No. 09/550,642, filed April 14, 2000, entitled, "Method and System for Down-Converting an Electromagnetic Signal, and Transforms for Same," directed to related subject matter.

Documents AD61 and AE61 were cited in an Office Action in related U.S. Patent Application No. 10/317,165, filed December 12, 2002, entitled, "Method and Apparatus for Reducing DC Offsets in Communication Systems Using Universal Frequency Translation Technology," directed to related subject matter.

The other documents in the PTO-1449 do not fall within the above categories.

It is noted that some of these documents could be classified in more than one of the above categories.

This statement should not be construed as a representation that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- ☐ 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- ☐ 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits. No statement or fee is required.
- ☒ 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.
 - ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first

cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☒ c. Attached is our PTO-2038 Credit Card Payment Form in the amount of **\$180.00** in payment of the fee under 37 C.F.R. § 1.17(p).
- ☐ 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our PTO-2038 Credit Card Payment Form in the amount of \$_____ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:
- ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).

☐ 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.

☒ 6. A concise explanation of the relevance of the non-English language documents appears below:

Document AL23 (DE 196 48 915 A1) appears to describe a process of frequency conversion. An English-language translation of document AL23 is enclosed as document AO59.

☐ 7. Copies of the documents are submitted herewith.

☒ 8. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No 09/525,615, filed March 14, 2000, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

☐ 9. No copies of U.S. patents and patent application publications cited on the attached Form PTO-1449 are submitted in accordance with 1276 OG 55 because this application was filed after June 30, 2003.

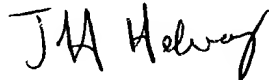
☒ 10. It is expected that the examiner will review the prosecution and cited art in the parent application nos. 09/525,615 and 09/526,041 in accordance with MPEP 2001.06(b), and indicate in the next communication from the office that the art cited in the earlier prosecution history has been reviewed in connection with the present application.

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

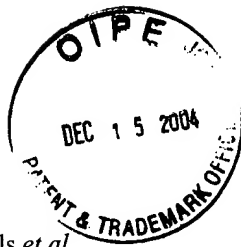


Jeffrey T. Helvey
Attorney for Applicants
Registration No. 44,757

Date: 8/19/04

1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

300205_1.DOC



Applicants: Sorrells *et al.*

Application No.: 09/632,856

Filed: August 4, 2000

For: Wireless Local Area Network (WLAN) Using Universal
Frequency Translation Technology Including Multi-
Phase Embodiments and Circuit Implementation

Due Date: NONE

Art Unit: 2634

Confirmation No.: 2377

Examiner: Kim, Kevin

Docket: 1744.0630003

Atty: JTH

When receipt stamp is placed hereon, the USPTO acknowledges receipt of the following documents:

1. SKGF Cover Letter;
2. Fee Transmittal (Form PTO/SB/17);
3. Third Supplemental Information Disclosure Statement;
4. Form PTO-1449 (6 pages);
5. Return postcard; and
6. PTO-2038 Credit Card Payment Form for \$180.00 to cover:
\$180.00 for IDS Late Filing Surcharge.



Please Date Stamp and Return to Our Courier

Sterne, Kessler, Goldstein & Fox
1100 New York Avenue, NW
Washington, DC 20005

DEC - 5 2004

Page 1 of 6

ATTY. DOCKET NO.

1744.0630003

APPLICATION NO.

09/632,856

INVENTORS

SORRELLS *et al.*

FILING DATE

August 4, 2000

ART UNIT

2634

THIRD SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA						
	AB						
	AC						
	AD						
	AE						
	AF56	6,687,493 B1	02/2004	Sorrells <i>et al.</i>			
	AG56	6,694,128 B1	02/2004	Sorrells <i>et al.</i>			
	AH56	6,031,217	02/2000	Aswell <i>et al.</i>			
	AI56	5,955,992	09/1999	Shattil			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL23	DE 196 48 915 A1	06/1998	DE			Yes (Doc. AO59)
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN		
	AO	59	English Translation of German Patent Publication No. DE 196 48 915 A1, 10 pages.
	AP		
	AQ		
	AR		

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449

THIRD SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.
1744.0630003APPLICATION NO.
09/632,856INVENTORS
SORRELLS *et al.*FILING DATE
August 4, 2000ART UNIT
2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA57	5,999,561	12/1999	Naden <i>et al.</i>			
	AB57	6,686,879 B2	02/2004	Shattil			
	AC57	6,704,549 B1	03/2004	Sorrells <i>et al.</i>			
	AD57	6,704,558 B1	03/2004	Sorrells <i>et al.</i>			
	AE57	5,490,176	02/1996	Peltier			
	AF57	5,970,053	10/1999	Schick <i>et al.</i>			
	AG57	6,078,630	06/2000	Prasanna			
	AH57	6,600,911 B1	07/2003	Morishige <i>et al.</i>			
	AI57	5,179,731	01/1993	Tränkle <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

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FORM PTO-1449

THIRD SUPPLEMENTAL
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1744.0630003APPLICATION NO.
09/632,856INVENTORS
SORRELLS *et al.*FILING DATE
August 4, 2000ART UNIT
2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA58	5,589,793	12/1996	Kassapian			
	AB58	4,510,467	04/1985	Chang <i>et al.</i>			
	AC58	4,772,853	09/1988	Hart			
	AD58	4,972,436	11/1990	Halim <i>et al.</i>			
	AE58	5,012,245	04/1991	Scott <i>et al.</i>			
	AF58	5,422,909	06/1995	Love <i>et al.</i>			
	AG58	5,440,311	08/1995	Gallagher <i>et al.</i>			
	AH58	5,926,513	07/1999	Suominen <i>et al.</i>			
	AI58	5,995,030	11/1999	Cabler			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
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FORM PTO-1449

**THIRD SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT**

 ATTY. DOCKET NO.
1744.0630003

 APPLICATION NO.
09/632,856

 INVENTORS
SORRELLS *et al.*

 FILING DATE
August 4, 2000

 ART UNIT
2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA59	6,047,026	04/2000	Chao <i>et al.</i>			
	AB59	6,049,573	04/2000	Song			
	AC59	6,076,015	06/2000	Hartley <i>et al.</i>			
	AD59	6,144,331	11/2000	Jiang			
	AE59	5,058,107	10/1991	Stone <i>et al.</i>			
	AF59	5,757,858	05/1998	Black <i>et al.</i>			
	AG59	6,531,979 B1	03/2003	Hynes			
	AH59	6,018,262	01/2000	Noro <i>et al.</i>			
	AI59	4,761,798	08/1988	Griswold, Jr. <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

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FORM PTO-1449

THIRD SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.
1744.0630003APPLICATION NO.
09/632,856INVENTORS
SORRELLS *et al.*FILING DATE
August 4, 2000ART UNIT
2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA60	5,982,315	11/1999	Bazarjani <i>et al.</i>			
	AB60	6,459,721 B1	10/2002	Mochizuki <i>et al.</i>			
	AC60	6,151,354	11/2000	Abbey			
	AD60	6,169,733 B1	01/2001	Lee			
	AE60	6,363,262 B1	03/2002	McNicol			
	AF60	6,697,603 B1	02/2004	Lovinggood <i>et al.</i>			
	AG60	5,282,222	01/1994	Fattouche <i>et al.</i>			
	AH60	5,949,827	09/1999	DeLuca <i>et al.</i>			
	AI60	6,014,176	01/2000	Nayebi <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

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FORM PTO-1449

THIRD SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.
1744.0630003APPLICATION NO.
09/632,856INVENTORS
SORRELLS *et al.*FILING DATE
August 4, 2000ART UNIT
2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA61	5,678,226	10/1997	Li <i>et al.</i>			
	AB61	5,760,632	06/1998	Kawakami <i>et al.</i>			
	AC61	6,160,280	12/2000	Bonn <i>et al.</i>			
	AD61	5,481,570	01/1996	Winters			
	AE61	5,745,846	04/1998	Myer <i>et al.</i>			
	AF61	5,345,239	09/1994	Madni <i>et al.</i>			
	AG						
	AH						
	AI						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

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DATE CONSIDERED

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Sorrells *et al.*

Appl. No.: 09/632,856

Filed: August 4, 2000

For: **Wireless Local Area Network
(WLAN) Using Universal
Frequency Translation
Technology Including Multi-
Phase Embodiments and Circuit
Implementation**

Confirmation No.: 2377

Art Unit: 2634

Examiner: Kim, Kevin

Atty. Docket: 1744.0630003

Fourth Supplemental Information Disclosure Statement

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98. The numbering on this Fourth Supplemental Information Disclosure Statement is a continuation of the numbering in Applicants' Third Supplemental Information Disclosure Statement filed on August 19, 2004 in connection with the above-captioned application.

Applicants have listed publication dates on the attached Form PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may

not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

Applicants provide the following comments regarding the documents:

Documents AP59 and AE63 were cited in an Office Action, mailed September 21, 2004, in related U.S. Patent Application No. 09/567,977, filed May 10, 2000, entitled "Optical Down-converter Using Universal Frequency Translation," directed to related subject matter.

Document AG61 was cited in an Office Action, mailed August 17, 2004, in related U.S. Patent Application No. 09/476,093, filed January 3, 2000, entitled "Communication System Method With Multi-Mode and Multi-Band Functionality and Embodiments Thereof, Such as the Family Radio Service," directed to related subject matter.

Documents AH61 and AI61 were cited in a Notice of Allowance, mailed August 18, 2004, in related U.S. Patent Application No. 09/525,615, filed March 14, 2000, entitled "Method, System, and Apparatus for Balanced Frequency Up-conversion of a Baseband Signal and 4-Phase Receiver and Transceiver Embodiments," directed to related subject matter.

Documents AA62-AF62, mailed August 25, 2004, were cited in an Office Action in related U.S. Patent Application No. 10/290,323, filed November 8, 2002, entitled "Method and Apparatus for DC Offset Removal in a Radio Frequency Communication Channel," directed to related subject matter.

Documents AG62-AI62 were cited in an Office Action, mailed September 8, 2004, in related U.S. Patent Application No. 09/632,857, filed August 4, 2000, entitled "Wireless Local Area Network (WLAN) Technology and Applications Including Techniques of Universal Frequency Translation," directed to related subject matter.

Documents AA63-AD63 were cited in an Office Action, mailed September 8, 2004, in related U.S. Patent Application No. 09/986,764, filed November 9, 2001, entitled "Method and Apparatus for Reducing DC Offsets in a Communication System," directed to related subject matter.

Documents AF63-AI63 were cited in a Notice of Allowance, mailed September 27, 2004, in related U.S. Patent Application No. 09/987,193, filed November 13, 2001, entitled "Method and Apparatus for a Parallel Correlator and Applications Thereof," directed to related subject matter.

Document AA64 was cited in an Office Action, mailed September 29, 2004, in related U.S. Patent Application No. 09/632,857, filed August 4, 2000, entitled "Wireless Local Area Network (WLAN) Technology and Applications Including Techniques of Universal Frequency Translation," directed to related subject matter.

This statement should not be construed as a representation that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- ☐ 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not

received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

- ☐ 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed within three months of the date of filing of a national application other than a continued prosecution application (CPA), OR within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application, OR before the mailing date of a first Office Action on the merits OR before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No statement or fee is required.
- ☐ 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.
- ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).

- ☐ c. Attached is our PTO-2038 Credit Card Payment Form in the amount of _____ in payment of the fee under 37 C.F.R. § 1.17(p).
- ☒ 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our PTO-2038 Credit Card Payment Form in the amount of **\$180.00** in payment of the fee under 37 C.F.R. § 1.17(p); in addition:
- ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- ☒ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- ☐ 6. A concise explanation of the relevance of non-English language documents appears below:
- ☒ 7. A copy of document AP59 is submitted. However, in accordance with 37 C.F.R. § 1.98(a)(2), no copies of U.S patents and patent application publications cited on the attached Form PTO-1449 are submitted.

- ☐ 8. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No. _____, filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).
- ☐ 9. It is expected that the examiner will review the prosecution and cited art in the parent application no. _____, filed _____, and indicate in the next communication from the office that the art cited in the earlier prosecution histories have been reviewed in connection with the present application.

It is respectfully requested that the Examiner initial and return a copy of the enclosed Form PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Jeffrey T. Helvey
Attorney for Applicants
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Date: 11/12/04

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Federal Agencies

November 12, 2004

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FILE COPY

Art Unit 2634

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Re: U.S. Utility Patent Application
Application No. 09/632,856; Filed: August 4, 2000
For: **Wireless Local Area Network (WLAN) Using Universal Frequency
Translation Technology Including Multi-Phase Embodiments and
Circuit Implementation**
Inventors: Sorrells *et al.*
Our Ref: 1744.0630003

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Fee Transmittal (Form PTO/SB/17);
2. Fourth Supplemental Information Disclosure Statement;
3. Form PTO-1449 (4 pages);
4. Copy of (1) cited document (Document No. AP59);
5. Return postcard; and
6. PTO-2038 Credit Card Payment Form for \$180.00 to cover:
\$180.00 for submission of an Information Disclosure Statement.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

Commissioner for Patents
November 12, 2004
Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Jeffrey T. Helvey
Attorney for Applicants
Registration No. 44,757

JTH/agj
333749_1.DOC

Applicants: Sorrells *et al.*

Application No.: 09/632,856

Filed: August 4, 2000

For: Wireless Local Area Network (WLAN)
Using Universal Frequency Translation
Technology Including Multi-Phase
Embodiments and Circuit Implementation

Due Date: NONE

Art Unit: 2634

Confirmation No.: 2377

Examiner: Kim, Kevin

Docket: 1744.0630003

Atty: JTH



When receipt stamp is placed hereon, the USPTO acknowledges receipt of the following documents:

1. SKGF Cover Letter;
2. Fee Transmittal (Form PTO/SB/17);
3. Fourth Supplemental Information Disclosure Statement;
4. Form PTO-1449 (4 pages);
5. Copy of (1) cited document (Document No. AP59);
6. Return postcard; and
7. PTO-2038 Credit Card Payment Form for \$180.00 to cover:
\$180.00 for submission of an Information Disclosure Statement.



Please Date Stamp and Return to Our Courier

Sterne, Kessler, Goldstein & Fox
1100 New York Avenue, NW
Washington, DC 20005



FORM PTO-1449

FOURTH SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO.
1744.0630003

APPLICATION NO.
09/632,856

INVENTORS
Sorrells *et al.*

FILING DATE
August 4, 2000

ART UNIT
2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG61	4,132,952	01/1979	Hongu <i>et al.</i>			
	AH61	5,260,973	11/1993	Watanabe			
	AI61	6,307,894 B2	10/2001	Eidson <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN		
	AO		
	AP	59	Deboo, Gordon J., <i>Integrated Circuits and Semiconductor Devices</i> , 2 nd Edition, McGraw-Hill, Inc., pp. 41-45 (1977).
	AQ		
	AR		

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449

FOURTH SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.
1744.0630003APPLICATION NO.
09/632,856INVENTORS
Sorrells *et al.*FILING DATE
August 4, 2000ART UNIT
2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA62	4,441,080	04/1984	Saari			
	AB62	4,873,492	10/1989	Myer			
	AC62	5,697,074	12/1997	Makikallio <i>et al.</i>			
	AD62	5,784,689	07/1998	Kobayashi			
	AE62	6,335,656 B1	01/2002	Goldfarb <i>et al.</i>			
	AF62	6,690,232 B2	02/2004	Ueno <i>et al.</i>			
	AG62	5,636,140	06/1997	Lee <i>et al.</i>			
	AH62	6,366,622 B1	04/2002	Brown <i>et al.</i>			
	AI62	6,600,795 B1	07/2003	Ohta <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

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	AP		
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	AR		

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FORM PTO-1449 FOURTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT				ATTY. DOCKET NO. 1744.0630003		APPLICATION NO. 09/632,856	
				INVENTORS Sorrells <i>et al.</i>			
				FILING DATE August 4, 2000		ART UNIT 2634	
U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA63	4,250,458	02/1981	Richmond <i>et al.</i>			
	AB63	5,760,629	06/1998	Urabe <i>et al.</i>			
	AC63	6,084,465	07/2000	Dasgupta			
	AD63	6,204,789 B1	03/2001	Nagata			
	AE63	6,064,054	05/2000	Waczynski <i>et al.</i>			
	AF63	5,218,562	06/1993	Basehore <i>et al.</i>			
	AG63	5,239,496	08/1993	Vancraeynest			
	AH63	5,896,304	04/1999	Tiemann <i>et al.</i>			
	AI63	6,005,903	12/1999	Mendelovicz			
FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)							
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FORM PTO-1449

FOURTH SUPPLEMENTAL
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August 4, 2000ART UNIT
2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA64	5,834,979	11/1998	Yatsuka			
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AK						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
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	AL						Yes No
	AM						Yes No

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